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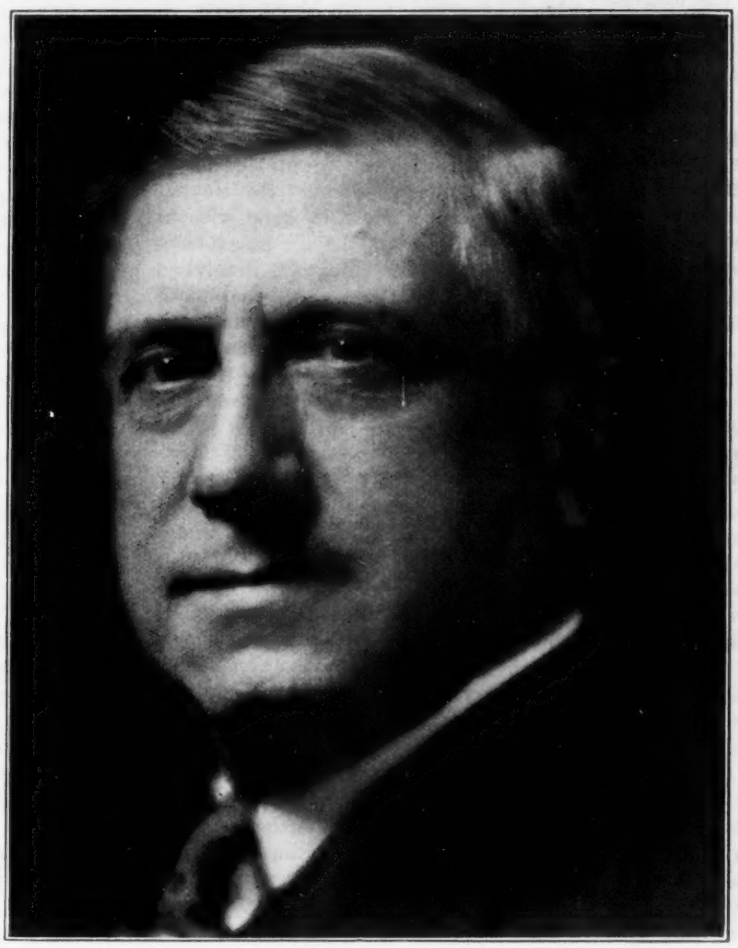
Schwab as New Institute Head Pleads for Co-operation

Bethlehem Chairman Acclaimed as He Succeeds to Judge Gary's Chair—Farrell, New Vice President, Pledges Corporation Support—Directors Attain More Prominence

AN ENTHUSIASTIC and affectionate welcome was extended to Charles M. Schwab by about 2000 members of the American Iron and Steel institute at the fall meeting of that body at the Hotel Commodore, New York, Oct. 28. Mr. Schwab, on that occasion, was inducted as president of the institute, having been elected by the directors at a meeting in New York the day preceding. When Mr. Schwab was introduced as the new presiding officer by James A. Farrell, the audience rose in a body and applauded him for several minutes. The demonstration left no doubt that the selection of the directors had the hearty support of the membership as a whole.

A feature of the Friday morning session had the effect of setting this fall meeting entirely apart from any meeting the institute previously has held. Mr. Schwab called to the platform all directors of the institute who were present. He had these directors seat themselves in rows which flanked him on his right and left, and he called upon two of them for remarks. Those who spoke under these circumstances were Willis L. King and James A. Campbell. In addition, Mr. Schwab presented Samuel Mather, a veteran director of the institute, who was greeted with hearty applause.

Those seated on the platform with Mr. Schwab in addition to Messrs. King, Mather and Campbell were E. J. Buffington, E. G. Grace, L. E. Block, A. C. Dinkey, E. A. S. Clarke, James A. Farrell, William J. Filbert, Horace S. Wilkinson, Isaac M. Scott, Samuel E. Hackett, William H. Donner and Severn P. Ker. John A. Topping, another director, arrived too late to take a place on the platform during the morning session but was called upon to preside over the afternoon proceedings.



CHARLES M. SCHWAB

Mr. Schwab made it plain that other voices than his own will be heard in the future. In calling upon Messrs. King and Campbell for remarks he explained that he would call upon those two gentlemen only "on this occasion," leaving open for assumption that future meetings can be expected to be characterized by informal remarks by various leaders in

the industry. E. A. S. Clarke, secretary of the institute,, wielded the gavel at the opening of the meeting, but restricted himself to making only a few announcements with respect to details of the program. He gave way to James A. Farrell, president of the United States Steel Corp., who on the previous day had been elected vice president of the institute at the time Mr. Schwab was chosen president.

Farrell Lauds Schwab

Mr. Farrell explained that at the meeting of the directors the previous day, it had been his pleasure and honor to nominate "our esteemed friend and collaborator, Charles M. Schwab, as president of the American Iron and Steel institute." Mr. Schwab, said Mr. Farrell, was a man sincere in his desire to promote the welfare of the iron and steel industry. That industry, said Mr. Farrell, now is at the beginning of an era of more intensive competition to get business, so that it is desirable that policies of stability be followed in the industry. In Mr. Schwab, said Mr. Farrell, the institute has a president who possesses the united support of the industry. Mr. Farrell pledged to Mr. Schwab his own personal support and the complete and honest co-operation of the United States Steel Corp.

Mr. Farrell's brief address was warmly applauded. The fact that Mr. Schwab is chairman of the Bethlehem Steel Corp., largest of the independents, whereas the late Judge Gary, heretofore president of the institute, had been chairman of the Steel Corporation, controlling nearly one-half of the country's entire capacity, did not escape anybody, and the open expression of the Steel corporation's support of Mr. Schwab caused much gratification which was the subject of much of the informal convention incidental to the meeting.

Mr. King, vice president of the institute, was introduced by Mr. Schwab as the "finest old man in the steel industry." Mr. King bespoke the support of the industry for Mr. Schwab in the execution of his policies as head of the institute. Mr. Campbell expressed great satisfaction over the election of Mr. Schwab as president and Mr. Farrell as vice president. Following the directors' meeting, said Mr. Campbell, he went to his hotel feeling more hopeful about what the institute would do than he ever had felt before. He was especially pleased with the address of Mr. Farrell, who had showed himself to be a big broad-minded man, generous in sentiments.

"I went to bed shortly after nine o'clock," said Mr. Campbell, "and was asleep in less than five minutes. That is the first time that has happened in three months. I have lain awake at night a great deal during that time. My peace of mind last night was the result entirely of the good feeling which prevailed among the directors at yesterday's meeting. I am sure that we will have co-operation which will enable us to do the reasonable thing by the public and ourselves."

Regarding the business situation in the steel industry, Mr. Campbell declared that prices are too low.

"There is nothing wrong with the country," said Mr. Campbell. "There is nothing wrong with the steel industry, except that prices are too low and none of us will be able to live long with such prices. We have put our costs down as low as we possibly can, and we must get more for our products."

This matter of low prices was emphasized in the remarks of Mr. Schwab. The latter, having been elected only the preceding day, did not have a prepared address. He spoke extemporaneously. He told about the large amounts of money which have been expended to cut down costs of steelmaking, and declared that these savings in costs are passed along to consumers.

The speaker stated that the next move in the steel industry must be in the direction of profitable distribution of its products. He emphasized that this must be done without any violation of law. Destructive competition, he said, is ill-advised and unfair to the people who invest their money in the steel industry. Mr. Schwab received much applause when he stated that he is going to inaugurate a complete co-operation from the head down, in the institute.

Tribute Is Paid

Mr. Schwab paid high tribute to the work and career of the late Judge Gary.

"He was the father and founder of this great institute," he said. "If he never did anything else this should be a monument to his accomplishments in the steel industry, and no man's voice will be heard oftener and with more sincerity in the admiration of Judge Gary than mine."

Mr. Schwab moved that a tablet in honor of Judge Gary be prepared and placed in some location to be decided on later. This motion was seconded by A. F. Huston, Lukens Steel Co., and unanimously approved by the membership present.

A spectacular feature of this meeting was a demonstration of recent applications of the Knowles grid-glow relay. This demonstration was conducted by S. M. Kintner, manager of the research department, Westinghouse Electric & Mfg. Co. Mr. Schwab, under the guidance of Mr. Kintner, passed his hand over a silvered glass globe, thereby starting and stopping an automobile alongside the platform. The current controlled a switch in the car which was driven by its starting motor through power supplied by storage batteries. Mr. Schwab, in commenting on the demonstration, thought it would be a fine thing if some device like that could be developed to move steel prices up.

Demonstrate Glow Tubes

The strains of Sousa's band and numerous other musical selections, including songs by John McCormack and other artists were heard from loud speakers operated by Knowles glow tubes. By means of these new tubes, the members of the institute heard music reproduced with a fidelity exceeding anything hitherto possible.

At the banquet Mr. Schwab reiterated his assurances that he would do all in his power to make his administration of the institute a success. He said, among other things, that he believed the sessions in the mornings and afternoons hereafter should be devoted to business discussions and that the evening sessions should be entirely devoted to promotion of good fellowship. More than 1600 attended the dinner, two adjoining rooms being necessary to take the overflow from the huge ballroom in the Commodore.

Virgil Jordan, chief economist, National Industrial Conference board, was the chief speaker at the banquet. He said that since the war, business and the general public had been afflicted with a "mathematical mania," listening to statistics that meant nothing. He advised business men to emancipate themselves from the "hypnotic spell of the statistical sleight-of-hand artist and the economic moonshiner" and to revive their "reliance and confidence in their original business instinct, intelligence and initiative."

Julius H. Barnes, former president of the United States chamber of commerce, was another speaker. Discussing "The Place of American Industry in International Trade," he declared this country's strong financial and economic position was not due to the world war but to the advanced industrial and business methods made possible by the free field given to private enterprise and initiative.

Partnership Spirit Will Give Steel the Profit It Merits

By Charles M. Schwab
President, American Iron and Steel Institute

IN HIS nomination of my humble self for this important office Mr. Farrell made the finest speech with reference to business and sentiment I have ever listened to. Although we may have made great progress in the development of our industry, to my mind the greatest progress and step forward that we have made has been the announcement of Mr. Farrell—who controls such a large percentage of the business of the country in iron and steel—as to his loyal support, as to his co-operation, as to his friendly feeling and concern for the necessities of the trade.

Mr. Farrell and I have been friends for 40 years. I knew him when he was not the important figure that he is today. I have known of him, during all this period of his active life—and I was instrumental in bringing him to New York for the development of a great trade—he has done nothing that has not been of the highest character and most commendable, both as a business man and as a friend. And the happiest moment I have is to accept this office sponsored and supported by Mr. Farrell, who has consented to become a vice president and will be an active co-operator, as he has always been, in the new administration of the Iron and Steel institute.

Now my friends, the president this year has one advantage: He has not had to prepare a formal speech. Not knowing that he was going to be president until yesterday afternoon it was not possible for him to do so. But there are a few things that I am going to insist upon. I want the members of the American Iron and Steel institute to see and know and find out what good looking fellows they have for their directors. I want them also to know that any sentiment expressed by the chair for the Iron and Steel institute is not the sentiment of an individual but the sentiment of this distinguished body of men. We are going to start with complete co-operation in every way, from the head down. And so what I have to say with reference to business conditions will be, as nearly as I can express it, the combined ideas or the individual ideas assembled of the board of directors.

I have been an optimist, and I am afraid I cannot change. I do not think that I have been wrong in my optimism over these past 45 years. In 1886, when this country made 2,600,000 tons of steel, I believed it was going to grow; it doubled the next 10 years and doubled each succeeding 10 years, until today for the fifth time it has doubled, and we are making over 40 million tons of steel. In my widest optimism I never was more optimistic and therefore I offer no apology to this American Iron and Steel institute for my optimism in the past, nor do I offer any apology for my optimism for the iron and steel business in the future.

I want first to thank the directorate for their selection of my humble self for this office, the highest one that can come to any man in our industry, or indeed in any industry. The directors well know that I urged my old and good friend Mr. King here to be president of this institute by reason of his long 59 years of service in the iron and steel business. Willis and I have been associated since boyhood, and he is qualified, and everybody would have loved to have had him. But Willis declined because he felt that his hearing and age did not permit him to enter into the activities of this position.

I asked Mr. Farrell and told him that I was ready to vote for him for president of this Iron and Steel institute, and Mr. Farrell with his usual generous action insisted upon nominating me for the office.

It is usually thought wise to say something about business. We have been through a pretty bad time. We have not been running full. During this past week, however, orders have shown an improvement. And we, the members of the institute, feel that the anticipations of better business in the future are being gradually realized.

There is one thing that we must get into our minds. We have spent vast sums in the development of our plants and the economies of operation. I attended a meeting of the Bethlehem company yesterday, and Mr. Grace showed that our company had spent $167,000,000 in four years in the development of our plants. We have made less money than we ever made before, notwithstanding the vast savings made in that direction. We have given away in other directions all the savings that we made in this vast expenditure of capital.

Now the next great move of the

(*Concluded on Page* 1135)

Institute to Honor Judge Gary with Tablet

I HAVE not known Judge Gary as long as Farrell and King and the rest of them but I did know him intimately and had business and other relations with him for 30 years. Words of eulogy from me about him would be but a repetition of what has been said by everybody in the iron and steel trade.

We must never forget that Judge Gary was the father and founder of this great institute. And if he never did anything else in his life, that should be a monument to what he has accomplished for American industry, business ethics and conditions.

It is true that differences of opinion will sometimes arise, but when death comes to a great and distinguished association every thought of difference, so far as I am concerned sinks as deep out of sight as the depths of the Atlantic ocean. No man's voice will be heard oftener or with more insistence and sincerity in admiration of our past president.

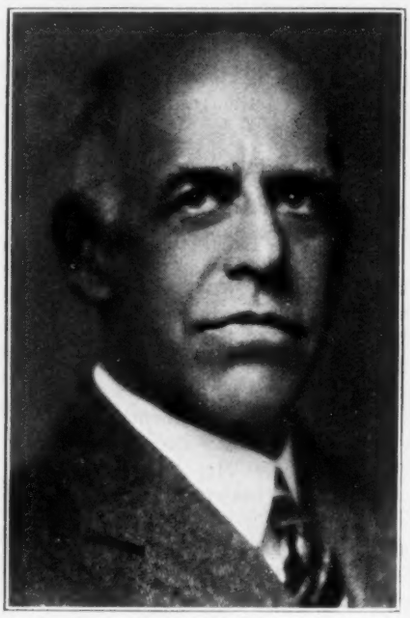
The directors feel that I should have the approval of the body of the institute to a suggestion by Mr. King that a suitable tablet be prepared as coming from the whole body of the institute, to be placed at some suitable place as an expression of our admiration and appreciation of the work of Judge Gary for the steel industry.

(*Approval was given unanimously*)

WILLIAM A. FORBES

Production Problems Given Attention of Institute

WILLIAM A. FORBES, assistant to the president of the United States Steel Corp., New York, was born at Stockton-on-Tees, England, Oct. 26, 1876. He entered the employment of Park Bros., Pittsburgh, in the chemical laboratory, in 1895 and later in that year joined the Carnegie Steel Co. at Homestead, Pa., in its chemical laboratory, remaining there until 1900. He was employed by the National Tube Co. at McKeesport, Pa., as assistant chemist, chief chemist and assistant superintendent of the blast furnaces, and at McKeesport, Pa., and Joliet, Ill., in studies of by-product coke oven developments. Since July 1, 1908, Mr. Forbes has had charge of the sale of all the coke by-products of the Steel corporation's subsidiaries and has specialized also in technological studies. He was made assistant to the president of the Steel corporation Oct. 15, 1927. His paper before the institute was entitled "Technological Problems of the Steel Industry."



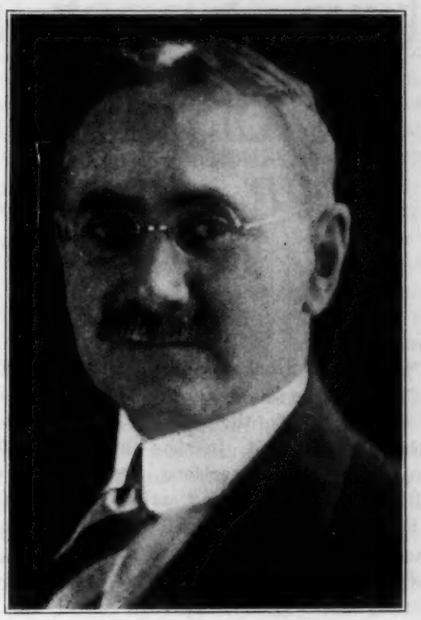
STEPHEN BADLAM

STEPHEN BADLAM, consulting engineer in Pittsburgh, began his career in the Duquesne works of the Carnegie Steel Co. in 1899, as a chemist. He was born in Boston Oct. 21, 1876, and educated in schools of that city, going to the Massachusetts Institute of Technology, from which he was graduated in 1900 with the degree of bachelor of science in mechanical and mining engineering. He joined the Steelton works of the Pennsylvania Steel Co. in 1900 as foreman, and was subsequently assistant superintendent of the merchant mill, of the rail mill and finally of the rolling mill department, in 1913. He left that company in 1913 to go with the Pittsburgh Crucible Steel Co., Midland plant, as assistant chief engineer, and was advanced to superintendent of the billet and bar mill department. He was chief engineer of the Pittsburgh Seamless Tube Co. from 1914-17 when he entered the army. He was mustered out in 1919 as a major of infantry, general staff, and went with the Philadelphia Roll & Machine Co. in 1920 as engineer. He went into business as consulting engineer in Philadelphia in 1921 and then joined Superior Steel Corp., Carnegie, Pa., staying there until 1926.

JAMES T. MACKENZIE

JAMES T. MACKENZIE, chief chemist of the American Cast Iron Pipe Co., Birmingham, Ala., is a graduate of the University of the South, Sewanee, Tenn., with the class of 1912. Immediately following his graduation, he entered the employ of the Cast Iron Pipe company, working in various departments until 1914 when he was made chemist in charge of melting and mixing. In 1918, he was relieved of routine work to devote all his time to experimental and research work. He is a member of the leading technical societies and is author of numerous papers that have been presented before the American Foundrymen's association. He is a member of several committees of that association. Mr. Mackenzie presented the annual exchange paper at the meeting of the Institute of British Foundrymen at Sheffield, England, in July on behalf of the American association. His paper for the present institute was entitled "The Sand Cast Centrifugal Process."

Technical Papers Convey Data on Research

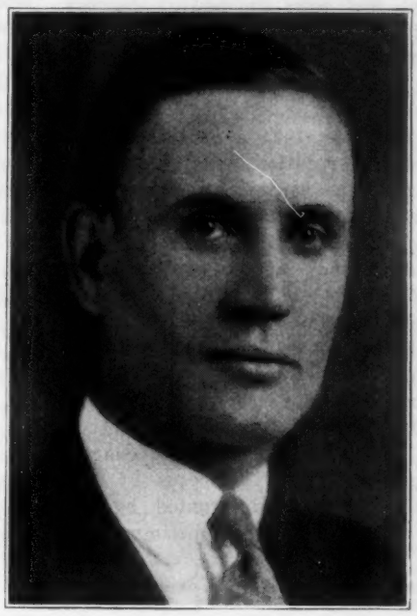


DAVID L. MEKEEL

DAVID L. MEKEEL, chief engineer, Jones & Laughlin Steel Corp., was born in Westchester county, New York. He was graduated from Haverford college, going from there to the Cambria Steel Co., Johnstown, Pa. He was employed by the Johnson Co. on the construction of its plant at Lorain, O., now part of the National Tube Co. Following this, Mr. Mekeel was employed by the Jones & Laughlin, Ltd., Pittsburgh, the Cleveland Rolling Mill Co., Cleveland, and its successor, the American Steel & Wire Co., Cleveland, and later by the Jones & Laughlin Steel Co. That company, now the Jones & Laughlin Steel Corp., has employed Mr. Mekeel for the last 27 years, of which the last 15 have been epent as chief engineer. Mr. Mekeel has contributed much to the engineering progress of his corporation. Mr. Mekeel is a member of the American Iron and Steel institute and presented a paper entitled "A Steel Mill Boiler Plant" at the recent meeting.

S. M. KINTNER

S. M. KINTNER, manager of the research department of the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., is well known for his development of radio apparatus and has done much research work towards its development. He is a graduate of Purdue university, Lafayette, Ind., with the class of 1894, and the year following his graduation he spent in telephone construction and operation, becoming later a member of the faculty of the Western University of Pennsylvania, now the University of Pittsburgh. While there he made investigations in X-ray, radio telegraphy, etc. In 1903 he joined the Westinghouse company as an engineer on research of high tension phenomena, lightning arresters, line and apparatus protection, etc. Four years later, he became connected with the railway engineering department and had charge of alternating current railway motor design, holding this position until 1911 when he joined the National Electrical Signaling Co., as general manager. He again joined the Westinghouse company in 1920 and from that time until he was appointed manager of the research department in 1922, he was engaged on radio development work.



T. L. JOSEPH

T. L. JOSEPH, supervising engineer of the North Central experiment station of the bureau of mines at Minneapolis, was born in Beaver, Utah, Sept. 12, 1894. He attended the University of Utah, Salt Lake City, from which he was graduated in 1917. He accepted a position later as chemist for the International Smelting & Refining Co., Tooele, Utah, and resigned this position upon the outbreak of the war to join the army. Following the war, he became associated with the bureau of mines, Pittsburgh experiment station, as metallurgical chemist, serving until 1922 when he was assigned to his present position. Mr. Joseph is a member of the iron and steel committee of the American Institute of Mining and Metallurgical Engineers, and a member of the American Society for Steel Treating. He received the J. E. Johnson Jr. award for 1927 in recognition of service to the metallurgy of iron and steel.

Strip, Sheet Mill Practice Overlaps After 50 Years of Development

Recent Design of Continuous Mills Marks Important Advance in Art of Rolling — Evolution Traced

By Stephen Badlam

THE outstanding achievement of the present decade, in the history of the rolling mill, is the development in the art of rolling wide, thin sections, as exemplified by the wide strip mills and the continuous sheet mill.

The rolling of wide, thin sections has developed along two distinct and originally widely separated lines. First: the rolling of strip, characterized by limitations in width and gage, rather than in length, second: the rolling of sheets, characterized by limitations in length, rather than in width and gage.

In 1924 strip was obtainable in widths up to 24 inches and in lengths as long as were demanded. Sheets were obtainable in widths as wide as were demanded (to about 52 inches) but were limited in length. Strip was produced from billets and slabs, and in units from 100 pounds up to 2000 pounds in weight, and was finished at delivery speeds up to 1000 feet per minute. Sheets were produced from sheet bars, and in units from 12 pounds up to 70 pounds in weight, and were finished at delivery speeds of about 240 feet per minute. Strips were always rolled single, while sheets were generally rolled in "packs".

In the year 1924 a sheet mill was placed in operation that produced sheets by a continuous process, in widths up to 45 inches and in lengths up to 30 feet. In 1927 a product was placed on the market, in widths up to 36 inches, having characteristics of both strips and sheets, but without the previously existing dimensional limitations of either. This new product approximates to strips in length, to sheets in width, and to both, in gage and physical characteristics. For the purposes of this paper it will be designated by the term "broad strip" to distinguish it from what is known as "wide strip" ranging from 12 to 24 inches wide.

Abstract of a paper presented before the American Iron and Steel institute, New York, Oct. 28. The author, Stephen Badlam, is consulting engineer, Pittsburgh.

During the present year two additional broad strip mills have gone into operation, and a third is well under way for the production of material 24 inches to 48 inches in width.

In its earlier stages, strip steel was merely a special product of the merchant bar mill, and was rolled, along with other thin, flat sections, such as pipe skelp, in the ordinary merchant mill. During the period from 1890 to 1900, however, the increasing demand brought it into the specialty class and special mills were built for its production.

Narrow Mills Developed

This differentiation took place first in the narrower sizes, from three inches down to five-eighth inch wide, and from 16 gage (0.065-inch) to 22 gage (0.028-inch) in thickness, which were known as "hoop". The period from 1890 to 1896 was one of rapid development of the narrow mills, and by the latter year it was practically complete, culminating in the Morgan mill built for the American Steel Hoop Co. at the Upper Union mills, Youngstown, O. This mill was designed especially for the production of light hoop and cotton tie. It is still in operation, and for capacity and economy has hardly been exceeded.

The production of pipe skelp, 4 inches wide and over, was the next to separate from the parent stem, and this was followed by thinner gages in the wider widths, which became known as band.

When the production of strip steel increased sufficiently to bring it into the ranks of a specialty, and mills were first built for its exclusive production, it was natural that they should be designed along the lines of the merchant mills with which their designers were familar, and which had been producing the material. An excellent example of the transition from the merchant mill to the strip mill is to be found in the Howard avenue plant of the American Tube & Stamping Co.

In the late eighties the Bridgeport Rolling Mill Co. operated a merchant bar mill which was approximately one-quarter mile from The Wilmot & Hobbs Mfg. Co.'s cold rolling plant on Hancock avenue. In 1893, The Wilmot & Hobbs Mfg. Co., in order to supply itself with raw material, purchased the Bridgeport Rolling Mill Co. and undertook to roll strip on the merchant mill, with what was at that time an unqualified success, producing strip up to seven inches wide. The mill as it existed at that time, consisted of five stands of 12-inch rolls in a line driven by one upright corliss engine and was later changed to a seven stand with the original corliss engine on one end driving the first four stands and a triple expansion marine engine on the opposite end, driving the last three stands. This mill used a small six-inch middle roll in the finishing stand and is the first example of the use of the backing roll principle in the hot rolling of strips of which we have any record. This mill was operated until 1913 and then shut down and held as a spare until 1918, when it was scrapped.

The present Howard avenue mill was erected in 1900 as an eight stand 16-inch mill for rolling wide sizes, 16 inches wide, down to six inches, but was not a success as a mill for rolling wide sizes and has been remodeled several times and now consists of two stands of 16-inch roughing, three stands 14-inch intermediate and five stands 12-inch with the original steam drive which was on the 16-inch mill. This forms the Howard avenue mill of the Stanley works, The American Tube & Stamping plant at Bridgeport, Conn.

In 1901 the West Leechburg Steel Co. built a 12-inch hot-strip mill, that for width and thinness exceeded anything that had been attempted up to that time.

The mill consisted of nine stands of rolls, 12-inch diameter, inclined, on the same shoes. The first four roughing stands were three high and the fifth roughing stand and the first fin-

ishing stands were alternate two high, the last finishing stand had an extra friction-driven roll placed above the top roll of the three high set. The middle and bottom rolls were dummies. The last five sets were all flat rolls, the piece receiving one pass in each. The average monthly production was 3500 tons and the best turn was 134 tons in 10½ hours.

The first mill definitely designed for the production of 16-inch wide strip was built by the American Tube & Stamping Co. at Bridgeport, Conn., 1905.

In 1905 the Superior Steel Co., Carnegie, Pa. built a wide strip mill, which in its original design consisted of a single stand, three high, universal rougher, followed by a five strand, alternate two high strand train. The roughing mill was not a success at the time and certain changes were made in it in 1906.

In 1902, the Youngstown Sheet & Tube Co. built a mill for the production of skelp, which was in many ways the predecessor of the modern strip mill. This mill showed the tremendous tonnage possibilities of the continuous type of mill, running as high as 20,000 tons per month of skelp from 7 to 22¾ inches wide.

The American Steel & Wire Co., at that time the largest producer in the country of flat wire, as the narrower sizes of cold rolled strip steel were called, in 1907 and 1908 built a mill at the Cuyahoga works designed especially for the production of hot-rolled strip steel in coils, for cold rolling purposes. This mill was novel in many respects. It was the first wide strip mill to be driven by electric power; it was the first application of the double-duo, in this country at least, to the rolling of strip; it was the first application of the tandem finisher to strip rolling.

In 1920-21 Illinois Steel Co. built a 20-inch strip mill at its Gary works. In 1922-23 the Otis Steel Co., Cleveland, constructed the first straight line tandem mill for the production of wide strip in which each pass is made in a separate set of rolls.

"In the foregoing pages," says the author, "we have endeavored to picture the development of strip rolling from a maximum width of 7 inches in 1890 to a maximum width of 24 inches in 1925, and from a length of 100 feet in the former year to a length of 500 to 1000 feet in 1925.

"You will note that the development progressed in more or less gradual states; the maximum width being: 1890 about 7 inches; 1899 about 10 inches; 1902 about 12 inches; 1905 about 16 inches; 1918 about 21 inches; 1922 about 24 inches. There was also a fairly definite limit to the ratio between width and gage in 1924, for example, the widest 16-gage strip that would be furnished on regular order was about 16 inches."

The author then traced the development of the sheet mill from the time of its introduction into the United States from Wales in the early part of the nineteenth century. He alludes to the plant of the W. Dewees Wood Co., McKeesport, Pa., established about the close of the Civil War as the first plant for the production of planished sheets. In the middle seventies the manufacture of pickled and cold-rolled sheets was begun by William Rogers, at Apollo, Pa. In 1876 the first bessemer steel sheet bars were produced at the Edgar Thompson works and rolled into sheets at the plant of the United States Iron & Tin Plate Co., McKeesport, Pa.

Designs Continuous Mill

The most ambitious early attempt to roll sheet width material by methods other than those of the ordinary sheet mill was made by Charles W. Bray in 1902 at the Monongahela works of the American Sheet Tin Plate Co. Mr. Bray had the courage to depart from the traditional methods and planned a mill for the continuous, or rather tandem, rolling of sheets.

The experience gained at the Monongahela mill was sufficiently encouraging to warrant the construction of the second mill on a more ambitious scale and it was decided to erect it at the Mercer works, Sharon, Pa.

During the years 1913 to 1921 the American Rolling Mill Co. had been conducting a series of experiments with the object of determining the fundamentals of sheet rolling, and from these had developed a plan for a continuous process of rolling sheets. The plan called for rolling in sheet lengths rather than in strip lengths, the old sheet bar, however, being discarded and replaced by a wider and thinner section. Construction of the mill was commenced early in 1923.[1] The installation, in brief, consists of a bar plate mill of seven stands, a rough sheet mill of seven stands and a sheet mill of five stands.

In 1924-5 plans were laid for the commercial production of broad strips in widths up to 36 inches and 18 gage and heavier and the Columbia Steel Co. began construction of such a mill early in 1926 at Butler, Pa.[2]

The earliest application of the backing-roll principle as applied to the rolling mills, of which we have any record, in 1864 when Bernard Lauth at that time one of the partners in the American Iron works, later the Jones & Laughlin Steel Co., patented the type of mill which bears his name. He devised a mill in which one roll of small diameter worked between two rolls of larger diameter and was supported by them over its entire length. In the next year, 1865, Henry F. Mann, Pittsburgh, obtained a patent covering the use of a pair of supporting rolls to each small diameter roll, this being of course, the principle of the cluster roll mill. There were numerous other developments.

After mentioning a number of other mills which have special features, the author next describes the 42-inch mill of the Trumbull Steel Co. which, in its new form, was placed in operation in June, 1927, for producing strip in widths up to 36 inches. The remodeling of this mill has converted it into a straight-line continuous train.[3]

The next broad strip mill to go into operation was that of the Weirton Steel Co. which started operation Aug. 10, 1927. This mill was designed to produce broad strip from 16 inches to 48 inches in width, 16 gage and heavier.

The American Sheet & Tin Plate Co. has a broad strip mill well under way at the Gary plant.

It is too early in the day to predict the future of this new type of mill in which after half a century of separate development, the strip mill and sheet mill have come together, but the best minds in the steel industry agree that it represents a tremendous advance in the art of rolling. That the operation will be a success, and that the broad strip, or continuous sheet mill, has come to stay is generally conceded, but that it will entirely supersede the hand sheet mill is questioned.

Undoubtedly as the older mills become economically unprofitable, which they would do eventually in any case, they will not be replaced and will gradually fade out of the picture, but as has been the case with almost every other innovation. The new method will create its own demand for its product, over and above the existing demand and the old will continue to maintain its existence alongside the new. Any disturbance of the existing order of things will be gradual rather than abrupt.

[1] A detailed description of this installation was presented in the June 16, 23 and 30 issues and the July 7 and 14 issues of IRON TRADE REVIEW.

[2] A description of this mill was presented in the May 19 and 26 issues and the June 2 issue of IRON TRADE REVIEW.

[3] This mill was described in detail in the Sept. 15 issue of IRON TRADE REVIEW.

Physical Properties of Coke Are Important in Blast Furnace

Bear Definite Relation to Mechanical Problems of Ironmaking Process—Opinions on Combustibility Differ

By T. L. Joseph

FURNACE operators often find it difficult to relate the physical and chemical properties of coke to its behavior in the blast furnace, and as a result no satisfactory standards of coke quality have been developed. The failure to define clearly the properties of coke is no doubt partly responsible for retarding progress in correlating some measureable property of the coke with its performance in the blast furnace.

After considering the various definitions which have been given for the combustibility of coke and the various methods proposed to measure differences in combustibility, the lack of a common understanding of what really constitutes differences in combustibility is very evident. Several ideas seem to be the basis for the various conceptions of this property of fuel. Most of the definitions express the idea that a highly combustible coke is one that will burn rapidly at the tuyeres of a blast furnace.

Generally speaking, he two ideas which seem to be embodied in the various conceptions of combustibility are, first, the idea of the rate and, second, the idea of a change in volume of the combustion zone. As previously pointed out, the rate of burning of coke at the tuyeres of a blast furnace is directly proportional to the air supply, because the gases leaving the combustion zone are largely CO and N_2 and a fixed relation exists between the amount of O_2 combined with a given weight of carbon. If the rate of air supply is doubled, the rate of burning is doubled. Any definition which refers to a rate, alone, is incomplete because the combustibility of the same coke can be doubled by doubling the air supply. If constant conditions of blast temperature and volume are assumed, such as proposed by Sweetser and Read, then the rate of carbon gasification will also remain constant. In order to relate combustibility of coke with some physical or chemical properties of coke, rather than define it as a mere rate of combustion department upon the air supply, it is necessary to inject a space rate concept into a definition of combustibility. Perrott and Kinney have done this in their definition of combustibility which follows: "Combustibility of coke from the standpoint of its use in the blast furnace is inversely proportional to the mean rate of gasification per unit volume of the combustion zone, assuming that other factors remain constant."

Penetration and Combustibility

If combustibility of coke is conceived to refer to those properties which determine the space required for its combustion at the tuyeres of a blast furnace, it is believed that this term will be more useful in interpreting furnace practice. Furnace operators have observed in practice that changes can be made in the general operation of a blast furnace by using tuyeres of different cross-section and length. Changes in the velocity of the blast through the tuyeres and the length of the tuyeres alter the working of the furnace with respect to the bosh and hearth walls, and also affect the mechanical agitation of the coke by the blast. Changes in the size of the coke lumps reaching the hearth of the coke lumps reaching the hearth have much the same effect as changes in the size of tuyeres. If the coke reaches the hearth in small pieces, the zones of combustion in front of the tuyeres will be smaller; the position of maximum CO_2 will be nearer the walls and the general results will be much the same as those produced by lack of penetration. As the combustion zone is drawn in toward the furnace walls, more gas is deflected along the bosh walls.

The writer has pointed out that the position in which the coke is burned at the tuyeres has an effect on the movement of stock in the blast furnace. A highly combustible coke or one which will be burned in a smaller space, nearer the tuyeres, will cause greater movement along the walls than a less combustible coke, which will be consumed at greater distances from the wall. The height to which the effect of localized combustion is transmitted in the shaft is governed by furnace lines.

In the experiments performed by the bureau of mines the size of the coke lumps has been found to exert a great effect upon the size of the combustion zone than the inherent properties of the individual pieces. Sizing of coke affords a means of changing the size of the combustion zone. The ability of the coke lumps to retain their size and shape until the combustion zone is reached depends upon the inherent properties of the individual lumps. The strength of the coke therefore has a bearing upon the extent of the combustion zone.

Uniformity of coke size would produce greater uniformity of condition in the combustion zone. Although little is known of the mechanical action in the tuyeres in relation to coke properties, the size of the zones into which the coke is moving and the stirring of the coke by the blast no doubt affect furnace practice. Uniformity of coke size would tend toward uniform conditions in the combustion zone.

Although the blast may be heated to temperatures ranging from 1100 degrees Fahr., the blast has a chilling effect upon the lumps of coke directly in front of the tuyeres. Ash, forms as the surface recedes and, although some of the ash may be blown away or fuse and part of it drop off the coke lumps, the most advantageous condition occurs when the coke directly in front of the tuyeres remains there for a short time only, being shifted at short intervals into a zone of higher temperature and more

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From a paper presented before the American Iron and Steel institute at New York, Oct. 28. The author, T. L. Joseph, is supervising engineer, bureau of mines, Minneapolis.

active slagging action. Under these conditions a clean surface is presented for combustion. It appears that the stirring of the coke by the blast is important in blast-furnace practice; the action is a mechanical one and there seems to be little information which will relate it to coke properties.

Increased rates of driving often observed in practice are believed to be due in a large measure to some condition which changes the extent of preparation of materials in the shaft rather than to changes in the coke.

The overall rate of fuel consumption in a blast furnace expressed in pounds of carbon consumed in the furnace per unit of time depends upon (1) the rate of air supply by weight, which fixes the rate of combustion at the tuyeres, and (2) the amount of carbon gasified above the tuyeres. Other things being equal, more reactive cokes will be consumed more rapidly than will less reactive cokes. Although there may be some advantages from the smaller volume of gases passing through the furnace when more reactive cokes are used, the writer believes that in general more efficient operation will be obtained the more closely Gruners' ideal is approached. The rate of blowing is the primary means of controlling the rate of combustion. Recent rapid strides toward increased production per furnace have been due to larger furnaces and in some cases to somewhat faster rates of blowing per cubic foot of working volume.

Resistance of the Charge

The use of Mesabi iron ore has necessitated several changes in practice. Vreeland has mentioned the increase in hearth diameter and bosh angle, and the method of placing the materials on the large bell. One item of particular interest he referred to was the necessity of using a large bell to keep the furnace moving. The effect of the large bell without the use of some device under it, such as the Killeen distributor, the MacDonald ring, or the Slick distributor, was to produce a decided difference in the porosity at the periphery and center of the furnace. It would appear in view of the standard practice of 2-foot bell clearance, which produces the condition just referred to, that an open center is necessary as a relief valve to allow the escape of sufficient gas to permit regular movement of the stock. A dense periphery is also desired to diminish lining renewals.

The preceding paragraph illustrates the marked effect which the increased use of Mesabi ore has had upon the resistance of the charge to gas flow. Although the fine ore offers a much greater potential surface for contact with the gas stream, the problem of providing an opportunity for heat transfer and reduction through contact between gas and solid is one of outstanding importance. Aside from furnishing heat and CO, the coke has another very important function of decreasing the resistance of the charge to gas flow. In general, coke will fulfill this object more satisfactorily if the pieces are large and retain their size until reaching the tuyeres.

Summary and Conclusions

1.—It is believed that failure to define the properties of coke clearly is partly responsible for retarding progress in correlating coke properties and furnace practice. Combustibility of coke has been widely discussed in the technical press and many views have been expressed as to what constitutes differences in combustibility and how such differences may be measured.

2.—If combustibility, a property of the fuel, is distinguished from rate of combustion, a factor controlled by rate of air supply, the term is of value in relating coke quality and furnace practice. Highly combustible coke will not burn faster before the tuyeres than less combustible coke, but it will burn in a smaller volume. The size of the combustion zone, controlled largely by the size of the coke, affects the working of the furnace with respect to the furnace walls. More combustible coke shifts the position of maximum CO_2 nearer the walls and results in concentration of heat toward the periphery of the furnace at the tuyere level. The size of the combustion zone affects the descent of the stock in the furnace. The predominating tendency is for the material to feed directly into the zone where the coke is shrinking as a result of combustion. Mechanical agitation by the blast is important, but there are no data to relate it to the various properties of coke. Gas samples taken from the tuyere level and observations by Perrott and Kinney when forcing a water-cooled sampling tube into the center of the furnace indicate that the mechanical stirring does not extend beyond the zone of active combustion. As the combustion zone becomes smaller it would appear more difficult for the coke to move into the zone of combustion.

3.—The conditions in the fuel bed of hand-fired laboratory furnaces, designed to determine differences in combustibility, are different from those existing at the tuyeres of a blast furnace; therefore the distance required to burn completely to CO in a hand-fired furnace cannot be taken as a measure of the distance required to accomplish this result in the blast furnace. This distance from the grate bars required to burn completely to CO or the approach to saturation of the gas with carbon, as shown by the gas composition at any point in the fuel bed, can be used to measure relative combustibilities, under properly controlled conditions.

4.—Under blast furnace conditions a fixed amount of air will consume a definite quantity of carbon in front of the tuyeres. Variations in the carbon gasified by contact with CO_2 outside the tuyere zone will affect the number of charges per day, when the wind remains constant. Data representing a wide range in operating conditions and various types of coke show that the average amount of carbon gasified above the tuyeres is surprisingly constant. Extreme cokes show a difference in reactivity with CO_2 at temperatures of 950 to 1,000 degrees Cent., but the difference for two cokes of about the same type is small. Conditions which control calcination of limestone and reduction of the ore before reaching temperatures at which CO_2 will react rapidly with coke of even small reactivity are believed to fluctuate more than coke made under modern oven practice. Progress toward larger production per furnace has been attained by increasing bosh and hearth diameters and in some cases by blowing more wind per unit volume of the furnace, but not per square foot of hearth area. Hearth areas have increased about 4 to 1 since the days of 11-foot hearths, whereas the volume has more nearly doubled.

5.—The use of Mesabi ore presented a new problem in blast furnace

Effect of Coke Size on Combustion Rate

Kind of coke	Amount charged pounds	Coke consumed pounds	Residue pounds	Gas analysis CO	Gas analysis CO_2 per cent	Gas analysis O_2
Clairton, natural size	100	47.0	53.0	12.4	9.6	0.5
Clairton, natural size	100	43.5	56.5	18.8	7.2	0.8
Clairton, crushed to through 1½-inch screen	100	57.0	43.0	20.8	4.0	0.0
Clairton, crushed to through 1½-inch screen	100	59.5	40.5	23.8	2.4	0.1
Clairton, crushed to through 1-inch screen	100	65.5	34.5	22.0	1.6	0.2
Clairton Domestic coke†	100	63.5	36.5	22.8	5.6	0.0
Clairton Domestic coke†	100	63.0	37.0	27.6	2.0	0.0

†Domestic coke averages about 1¼ inches in size. All samples were thoroughly screened over ½-inch screen.

practice, namely, that of moving a large quantity of fine ore under the force of gravity, counter-current to a large volume of gas. Present practice seems to have settled upon a big bell clearance which produces a dense periphery and a porous center, the latter acting as a relief valve for sufficient gas to permit regular stock movement. The dense periphery was also adopted to decrease lining renewals.

6.—One important function of coke is to decrease the resistance of the charge to gas flow. This function, which is more important with the use of fine ore, is more satisfactorily performed by large pieces of coke of low density which will retain their size until reaching the tuyeres.

7.—It appears that the physical properties of coke bear an important relation to the physical and mechanical problems of the blast furnace.

Technology of Steel Shows Progress

By William A. Forbes

THERE is probably no more important unit of the steel industry than the technological. Technology, in its simplest conception in industry, is the transforming process whereby natural resources are modified, through a series of physical and chemical operations, into commodities required to satisfy the needs of the community. The technologists develop the way for this progress, by demonstrating in laboratory and experiment what can be done, and are ably followed by the civil, mechanical, and electrical engineers in designing plants and machinery, which will make economical production possible.

In the field of furnace construction and design, the trend has been towards refinement of existing furnace types, rather than any marked departure.

The principal feature of the modern blast furnace is its large production of pig iron as compared with former operation.

Most of this increased capacity is ascribed to the greater diameter hearths now in vogue, up to 22 feet 3 inches, as against 13 to 16 feet in earlier years, and to the blast furnace lines in general.

One of the outstanding problems under continual study by the steel industry pertaining to blast furnace operation is this problem of sintering or briquetting of flue dust, and also of fine ores, and their economy as compared with using these materials unconditioned.

An interesting development has taken place in the use of large tilting furnaces for high scrap charges. It has been found that these large tilting furnaces are advantageous in taking care of peak production by duplexing; or in large scrap charges, when high production is not necessary.

One of the more important changes in open-hearth practice has been the general increase in use of tar and coke oven gas, replacing producer gas and natural gas.

When using tar alone as a fuel, the furnace design is simple, and considerably cheaper to build than a producer gas furnace. Normally, the life of the furnace is much shorter than that of a producer gas or natural gas furnace, but because of the possible increased driving and larger tonnages the cost per ton for repairs and rebuilding is normally lower than on producer gas furnaces.

Among the outstanding features have been the venturi or modified venturi furnace, the sloping back wall, the use of suspended roofs, and the installation of notably large-sized stationary basic open-hearth furnaces at some plants.

Another development of considerable promise has been the use of high-manganese pig iron in basic practice.

In addition to the economic advantages claimed, it is pretty well definitely established that the use of high-manganese pig iron makes for smoother and better open-hearth operations.

Insures Sound Ingot

In stripping and heating, the general practice now is to have a stated time that the steel must remain in the molds before stripping, and a minimum time before it may be drawn from the soaking pit for rolling. This insures a solid ingot when rolled.

The principal technological development in the seamless tube industry has been to make available hot finished pipe and tubing of suitable quality, in place of cold-drawn tubing.

One of the most interesting problems with which the sheet steel manufacturer has had to deal in the last decade is the production of material to meet the exacting requirements of the automobile trade.

For the purpose of meeting the new demands, a process of "open annealing" was developed. According to this method, the sheets were heated to a high temperature singly and in procession, in an extremely short furnace, and were then cooled rapidly in the air to preserve the structure set up by this treatment. The desired degree of toughness was imparted without brittleness, and the tendency to "pull coarse" during fabrication was overcome.

In recent times there has been a constant trend towards higher carbon steels in the cold heading industry, especially in wire used in the manufacture of cap screws.

From the experiments, it developed that wire drawn from rods which had been thoroughly soaked at a relatively high temperature (about 1650 degrees Fahr.) showed the best flowing qualities in the cold-heading operations. As a result of the improved qualities of "normalized" wire, a greatly improved product is obtained, and also a marked increase in the life of the heading and thread rolling dies, the increase in the life of the latter alone, paying for the slightly increased cost of the "normalized" wire over the ordinary bolt and cap screw wire.

It has long been known that carbon and other elements in steel increase its electrical resistance. This fact has been taken advantage of by the laboratories, in developing a quick method of checking the grade of steel in cold drawn bars or wire previous to shipment, or in separating two grades of steel, in case there has been a mixup at a customers' plant.

In dealing with steels of a high order of quality, we consider the inherent purity of the ferrite grain as being a vital necessity, whether the final attributes of that steel be fully induced by suitable heat treatment, or availment be made of the immediate attributes of the steel in its fabricated but untreated condition.

Consideration of alloy additions is closely interwoven with the thoughts that have already been expressed on the "ferrite grain"; scavenging an already poisoned ferrite may in some instances go a long way towards effecting its ultimate purity; and while it has already been said, that the freer the ferrite from impurities, the better is the condition and the distribution of carbides in the heat treated steel of which it forms the main

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Abstract of a paper presented before the American Iron and Steel institute, New York, Oct. 28. The author, William A. Forbes, is assistant to the president, United States Steel Corp., New York.

constituents, it is quite logical further to assume that certain complex ferrite magmas may function even more perfectly than pure ferrite in this regard. In point of fact, scanty evidence already points to the beneficent action of one alloy in this direction, but so much remains to be found out that even in this one field the combined efforts of the physical chemist and of the metallurgist find a wide scope.

In addition to such studies, the technological departments of the steel industry are continuously employed in assisting customers to overcome troubles of various natures which they have encountered in using steel, these cases being presented under the assumption that some inherent steel condition is responsible for the trouble. In most cases, study and observation by our metallurgists discover the cause, which comparatively seldom is due to faults in the steel condition, and suggest the remedy: Mutual benefit is derived from these investigations.

The technological departments of the steel industry are frequently called upon, also, to co-operate with customers in formulating steel specifications and in developing grades of steel which can be worked by the customer with his equipment, for a given purpose. There are so many cases that it is futile to cite specific instances and such cases apply to every branch of finished products.

Power Plant Burns Cheaper Coal

By D. L. Mekeel

THE ideal condition for a steel mill is to produce sufficient power from the blast furnaces to completely process steel products.

We are all endeavoring to approximate this goal as nearly as may be practicable; but in locations where coal is cheap we naturally are not justified, on account of the required investment, to reach as far in this direction as in the dearer coal markets. Coupled with this condition, we have many works which carry on to a more highly finished product in the same plant, calling for additional power for the processing.

The Jones & Laughlin Steel Corp., due to its cheap and convenient coal supply and the production of highly finished products in the same plants as the primary operations, is one of the steelmakers who will doubtless find it profitable to produce a percentage of their power from coal-fired steam for a long time,

The boiler house which we will discuss does not, on account of cheap fuel, contain all the devices to capture and hold the last B.t.u., but we believe goes as far as is economical from a financial standpoint under the conditions, and possesses a reliability, simplicity and flexibility well adapted to carrying satisfactorily a steel mill load. These qualities are of primary importance.

At the South mills of the Aliquippa works steam for mill engines, pickling, heating, etc., has heretofore been supplied from stoker-fired boilers, burning coke breeze and some coal, operating at 150 pounds' pressure. These normally developed about 5000 boiler horsepower. Steam for operating the turbo-generators located at this point has been supplied from boilers using waste heat from rectangular coke ovens and operating at 200 pounds' pressure. These developed normally about 10,000 boiler horsepower, a total of about 15,000 boiler horsepower which, with immediate and contemplated development, would soon be inadequate.

The waste-heat boiler plant has given satisfactory service for a number of years, but the abandonment of these coke ovens and the replacement of their capacity with by-product ovens renders the boilers no longer of use, as they are not set or arranged in a way to permit of adapting them to satisfactory coal firing.

After considering all the alternatives, it was decided to construct a thoroughly modern boiler plant which would completely replace the waste-heat plant and limit the stoker-fired plant to burning such coke breeze as might be available.

Superheaters Are Provided

The electric power plant equipment is capable of using steam at 225 pounds gage pressure and 120 degrees superheat. In order the deliver this pressure to the turbines and thus secure the maximum efficiency of which they are capable, boilers were purchased for a working pressure of 250 pounds gage and provided with superheaters to give the desired total steam temperature. A pressure reducing and desuperheating system is provided, through which steam from this boiler plant may be fed into the 150-pound system when the available coke breeze is not sufficient to produce the low pressure steam demand.

Study of the present steam demands and consideration of probable developments in the near future indicated the desirability of providing a developed boiler capacity of about 20,000 horsepower. The available space for boiler house construction was such that this capacity could be secured through the installation in a single row of five boilers of 1900 nominal horsepower to operate normally at about 200 per cent rating. As the plant is constructed, there is space for the future installation of two more boilers, one at each end of the boiler house.

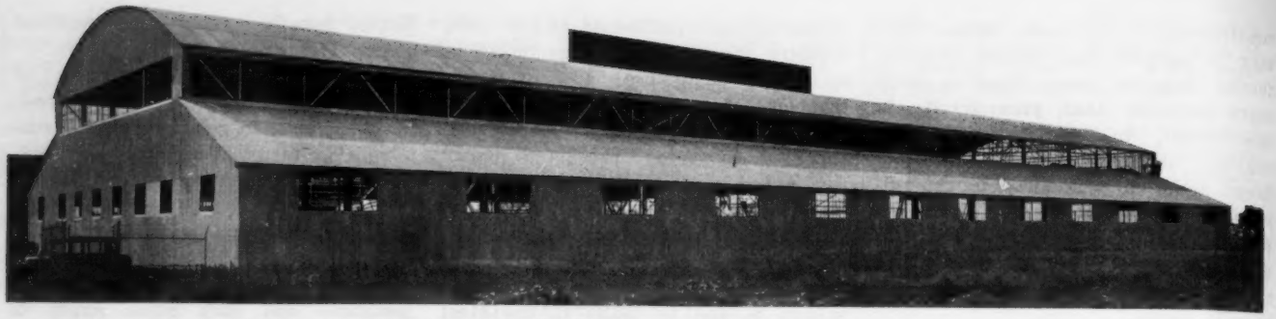
Pulverized fuel firing was chosen as embodying the best modern practice, lending itself to future development and producing an economic operating result. Unit type pulverizers with air register type burners though not quite as high in efficiency as the central pulverizer plant system, cost somewhat less and with the low cost of coal prevailing at this plant were figured to produce, including fixed charges, a lower over-all steam cost.

Each boiler is provided with two motor-driven unit type pulverizers and two burners having a combined capacity of 20,000 pounds of coal per hour which is sufficient to run the boiler at about 320 per cent rating. One pulverizer and burner can be operated to produce from 75 per cent to a little over 150 per cent boiler rating. This broad range in rating permits great flexibility in plant operation.

Coal is conveyed from the main mill receiving and crushing plant to the boiler house by an inclined belt conveyor and delivered directly into an overhead suspended steel bunker having a capacity of 2000 short tons, sufficient to operate the boiler plant for about 40 hours.

Tests made during March indicate operating efficiencies of 79 per cent at 100 and 150 per cent rating, 78 at 200, and 76 per cent at 250 per cent rating.

From a paper presented before the American Iron and Steel institute meeting at New York, Oct. 28. The author, D. L. Mekeel, is chief engineer, Jones & Laughlin Steel Corp., Pittsburgh.



Exterior View of the Warehouse Building Showing Sheet Steel and Structural Steel Construction

New Chicago Structural Steel Plant Follows Aggressive Sales Policy

By Fred B. Pletcher

WHEN industrial works expansion has been undertaken in the past several years, particularly the development of new plants for the fabrication of metal products, a definite trend toward removal from the metropolitan centers has been noted. The Mississippi Valley Structural Steel Co., one of the oldest and largest independent structutral steel fabricators serving the Middle West, has chosen the opposite course in the building of its new and third plant by locating it at Melrose Park, Ill., a westerly suburb of Chicago.

This company with headquarters in Decatur, Ill., has what it considers a number of sound reasons for building its third plant in the Chicago metropolitan district. The new plant has been under construction during the summer and autumn months and now is ready for operation. The company also has a plant at St. Louis, in addition to the Decatur and the new Melrose Park plants. The two older plants will continue serving their territories without change in personnel of the officials.

The Decatur plant now covers central Illinois, western Indiana and nearby territory to the Southeast. The St. Louis plant serves southern Illinois, Kentucky, Missouri, Kansas, Arkansas, Oklahoma, Texas and the territory West and Southwest. The Melrose Park plant is expected to serve primarily the Chicago market, and in addition northern Illinois, Michigan, Iowa, Indiana, Minnesota and Wisconsin. Direct rail connections can be made to all these points from the new plant.

The company foresees Chicago as an active potential structural steel market. Beside the heavy municipal work in prospect, it is believed that the normal expansion of business and industrial premises will absorb additional structural steel products, such as the Mississippi Valley company is equipped to market there. Chicago being a leading railroad center, and with the development of new railroad terminals planned, the carriers are expected to be active buyers of structural steel in the next few years. Possibility of subways for Chicago and additional double-decked streets to care for traffic offer other opportunities. The Melrose Park plant likewise is located admirably to bid on construction work for the West Side of Chicago, for which the West Park commissioners have announced proposed improvements of about $10,000,000. Further indications of the possibility of growth in construction in the territory around Chicago is foreseen in the fact that the center of industry, which has been moving westward, now is about 50 miles southeast of Chicago.

Still another basic policy, as far as the economics of its expansion are concerned, calls for a new plant in the Chicago district because of the ruling out of Pittsburgh plus three years ago. The company feels it now can buy the plain material it uses from Chicago mills with less freight costs to absorb, and at the same time to maintain its geographical location as to its source of supply.

The Mississippi Valley Structural Steel Co. is actively engaged in the comparatively new art of arc welding in structural work, in which it was one of the pioneers. In the new Melrose Park plant, this type of work will be carried on extensively. The company has used welding in its production of structural material in the past, particularly in the making of steel curved chord garage roof trusses. Construction of large garages in Chicago for a number of years has followed almost exclusively the custom of the bolted wood arch trusses, and the company believes Chicago offers an active market for the new type of arc welded trusses, for which the Melrose Park plant is equipped to turn out in addition to welded material for many other types of building. The company has met with increasing success in replacing wood trusses in garage and industrial buildings in the St. Louis district.

The material warehouse, which extends across one end of the Melrose Park plant, is constructed entirely of welded steel framework with the exception of the smaller wind bracing and truss connections which were riveted to facilitate erection. The crane girders in that building and in the loading and painting yard, where the finished sections are handled, also are welded. This is said to be the first construction of structural steel fabricating plant buildings by the arc welding practice. This work was done by the Mississippi Valley company's own equipment and force. Thus important economies in the construction of the plant were brought about. Much of the equipment to be used also was designed by the company itself.

The column sections of the steel framework were built up by welding I-beam and channel flanges to a wide plate web, the welding being done by

continuous seam giving great strength where it was required. An automatic arc welding machine has been designed and built by G. A. Caldwell, vice president and general superintendent of the company, for which patents now are pending. It is capable of making either one or two continuous seams simultaneously, either one or two intermittent seams, or one continuous and one intermittent seam, the welds being uniform throughout their length. In intermittent welding, the spacing of the welds and the lengths of the welds themselves are machine made. The striking and breaking of the arc are automatic, the operator changing from one kind of seam to another by push button control.

Officials of the company believe that arc welding in structural steel work will grow in successful application, but that it is a process requiring the best of equipment, competent workmen, and the most rigid supervision. They point out that a careful study of the problems of arc welding should be made, and that it should not be the subject of injudicious use.

Equipment designed and built by the company's engineers, is installed for testing fullsize welded pieces. The machines are capable of testing trusses, girders, columns, and other fabricated products from a light load to destruction of the pieces under test. While in welding the structural work for the new warehouse, the Mississippi Valley company built up the sections both in field and shop welding and the advantages of shop welding as against the former are stressed. Close supervision and inspection are required, and as these can be given best by trained technicians in the shop, even to keeping the electric current at constant strength, it is planned to engage in shop welding work to a greater extent, where also the heavier and more efficient equipment is available.

One of the distinguishing features of the plant is the accessibility of daylight and the spaciousness in relation to the mechanical equipment. The welded curved truss roofs are ingeniously fitted with glass sections forming a continuous skylight running their full lengths, and the ventilating sections of the roofs have corrugated wire glass skylights.

The Melrose Park plant buildings roughly are constructed in a pyramid-shaped layout, with the material warehouse as the base. From its center the warehouse opens into the punch shop, welding floor and forge shop, which in turn taper into the assembling shop and riveting department ahead. An industrial narrow gage track carries loaded trucks through these shops from the material warehouse to the loading and painting yard at the west end of the plant. These trucks are pulled by small tractors.

The warehouse is 337 feet long and is 82 feet between columns, with leantos on either side 25 feet in width. The punch shop is 167 feet long and 166 feet wide. The assembling shop is 80 x 121 feet, while the loading and painting yard is 82 x 192 feet. The service buildings on the south and adjoining the punch and assembling shops are 28 x 182 feet.

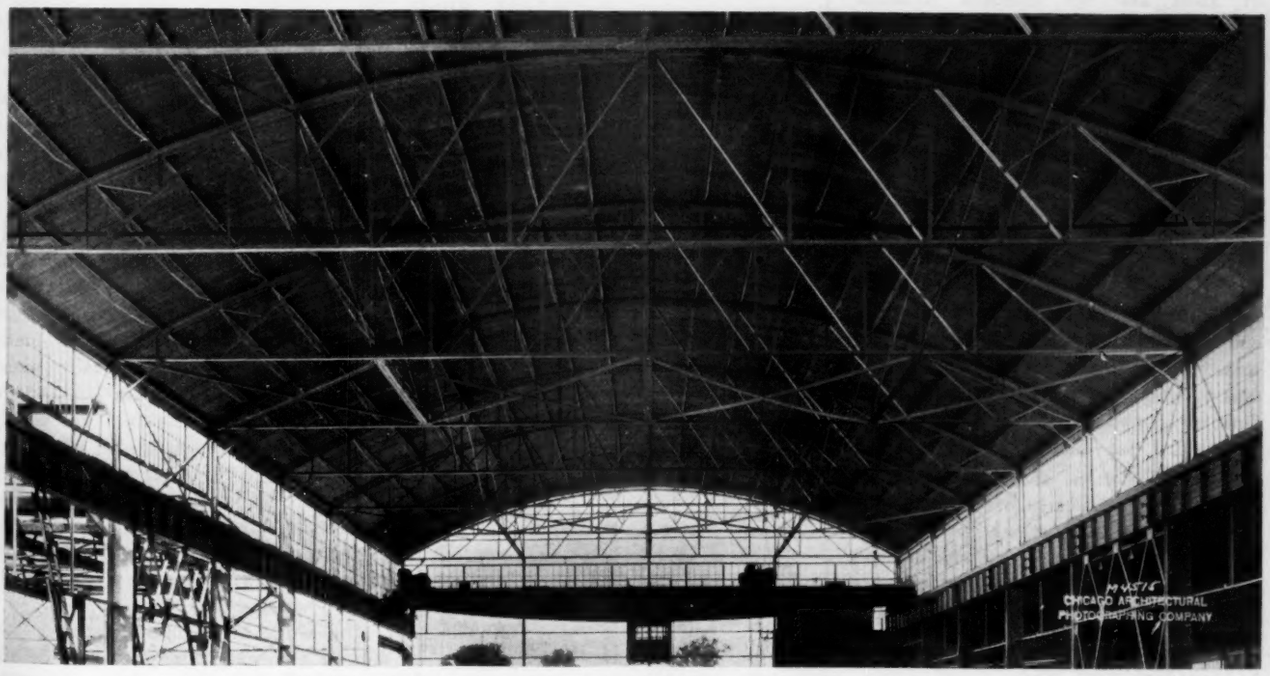
Thus the flow of the material from the material storage toward the finishing end is in one direction. The material is handled by overhead roof cranes, traveling crosswise of the shop throughout and serving the industrial tracks running through the center. This economy of handling was made the subject of careful study before the plant was laid out. The double railroad tracks connecting with the Indiana Harbor belt line railroad lead directly into the material warehouse, thus eliminating double handling of the plain material to be fabricated.

The material comes in at the north end of the warehouse, and double lengths can be handled. The warehouse is equipped with an 80-foot bridge crane with double trolleys of 15 and 5 tons. The latter are used to convey work to the machines but all are pressed into service in handling the maximum lengths.

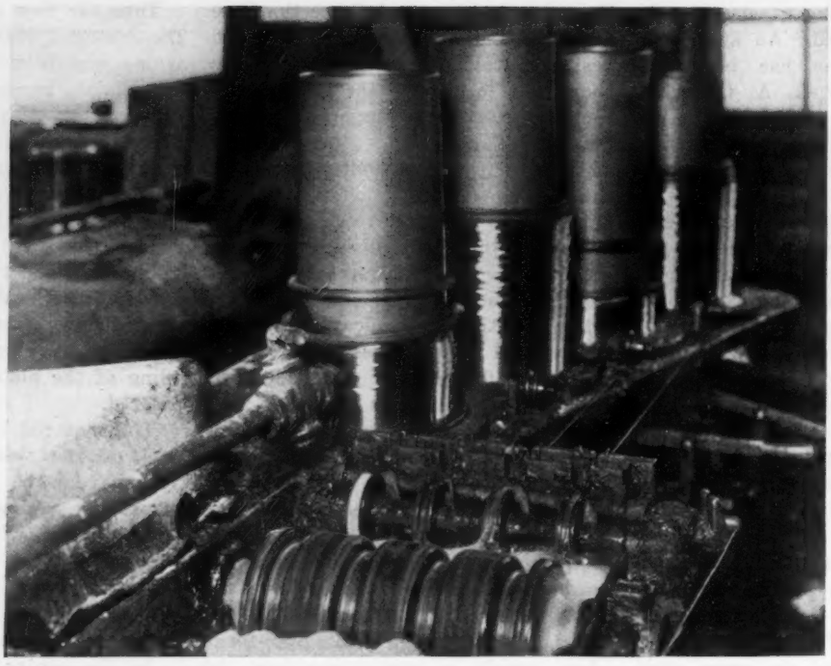
In the center and at the entrance to the punch shop are the 8 x 8 x 1-inch angle shear and the 5-foot x 1-inch plate shear. Each is served by a 22-foot 1-ton electric jib crane and skid tables. The punch shop work is laid out in three panels, one for plate work, one for angle fabrication and the third for beam work, all served interconnectedly with transfer cranes.

Fed by 2 and 3-ton hoist cranes the plate punch spacer, the single and double angle punch spacers, the beam punch spacer and the beam and column bolt-up and riveting equipment are situated at right angles to the shears and the drills. These are in

(*Concluded on Page* 1138)



INTERIOR OF THE SHOP BUILDING ILLUSTRATING THE STEEL ROOF TRUSCON WORK



This shows the wire passing through the last set of dies in the delicate process of drawing piano wire.

Large Uses of Steel in Small Ways

BEFORE the advent of alloy steel, piano wire had the greatest tensile strength of any substance commercially manufactured. Piano wire is a highly specialized product and few people realize the rigid requirements for this product demanded by the manufacturers of high grade pianos. Tests which are scarcely credible in the eyes of manufacturers of other high grades of steel are the common practice in the plants producing piano wire. Some idea of the properties of piano wire may be gained from the fact that there is 60 per cent rejection in the manufacturing process today after more than 20 years of experience. Test pieces must withstand cold flattening on an anvil without a crack. They must also undergo a heading or upsetting operation without a crack. One test calls for wrapping wire about itself in a tight spiral, a distance of six inches. These are all mechanical tests. In addition to these are the less easily defined acoustic tests. One company maintains an extensive laboratory for such testing.

The production of piano wire in this country, exclusive of the so-called music string wire, which is a different product, averages about 300,000 pounds per year. The requirements per piano are relatively small. A concert grand piano uses about 3 pounds of steel piano wire. Fully 90 per cent of the piano wire made in this country is drawn from Swedish billets or rods. Some manufacturers roll their own rod from the Swedish billets. Others buy Swedish rod and cold-draw it to produce the wire.

The process of cold drawing piano wire differs widely from the usual cold drawing practice. Starting with a No. 7 wire rod there may be 35 or 40 different draws before the finished piano wire is produced. In modern mills this entire sequence is a continuous operation. The wire passes at times through heating zones which in effect give it a continuous annealing action, and then at other points the wire passes through cooling zones to counteract the excessive heat which otherwise would be produced by several drawing operations. The illustration shows the last reducing stage and the coiling in the production of piano wire. Here the wires are passed through an oily sudsy lubricant before entering the last dies.

In actual use on a piano the individual wire exerts a pull of about 225 pounds. This means a total strain for all wires of from 20 to 30 tons, which strain is carried by a piano plate casting. A high grade piano wire will break at from 350,000 to 400,000 pounds pressure per square inch. Piano wires range in size from 0.03-inch to 0.065-inch, and in length from two inches to six feet or more. To obtain single wire vibration for the lower notes wires are loaded with tightly coiled copper or other soft metal windings.

The work of acoustic engineers today is changing many of the details in the manufacture of piano wire.

Piano Wire

THIS is the one-hundred second of a series of articles dealing with some of the obscure uses of steel which go far toward absorbing the American tonnage.

Among articles appearing every two weeks and not included in Vol. I containing 51 separate descriptions are:

Tie Plates	*Camp Stoves*
Tacks	*Bottle Caps*
Knives and Forks	*Artificial Limbs*
Fence Posts	*Finger Nail Files*
Dental Drills	*Pencil Lead Boxes*
Rat Guards	*Small Steel Cases*
Overall Trimmings	*Lace Tips*
Shoe Steel	*Oil Cups*
Skates	*Ventilators*
Golf Clubs	*Toy Autos*
Burial Caskets	*Safes*
Scissors—Shears	*Steel Derricks*
Pistols	*Handle Cores*
Milk, Ice Cream Cans	*Typewriters*
Telephone Indices	*Steel Cross Arms*
Steel Heddles	*Ticket Punches*
Magazine Racks	*Wrenches*
Lawn Mowers	*Stamp Pads*
Shelter Houses	*Hair Clippers*
School Furniture	*Shuttles and Bobbins*
Vacuum Bottles	*Suspenders*
Highway Guards	*Screw Hooks*
Numbering Machines	*Steel Bridging*
Joist Hangers	*Mail Boxes*
Straight Razors	*Steel Shelving*

Editorials

Broad-Minded Action Now in Order
Mechanization Now a 50 to 1 Bet
Why Not Air This Problem?
Way of the Forecaster is Hard

Another Case for Co-operation

AS USUAL, the annual convention of the American Institute of Steel Construction furnished inspiration not only for the several hundred fabricators holding membership in that organization, but also to other branches of industry. One cannot review the accomplishments of this youthful body without wondering what would happen if the entire steel industry could be charged with the same enthusiasm, vision and energy which has carried this group to success in its early efforts.

As in past years, the subject of the relationship by the steel fabricators and rolling mills came in for serious consideration. The fabricators have presented their case time and time again with patience and emphasis. The mills have not responded either in denial or admission of the charges.

Without discussing the merits of either side of the question, it is apparent that the problem is important and is one of fundamental principle having wide application in many industries. Primarily it is a problem of distribution.

Considering the many advantages that would result from a satisfactory solution of this problem, would it not be desirable for representatives of the mills and fabricators to get together and discuss the question frankly with a view of arriving at some solution which would eliminate the present economic waste? Here is an ideal test case wherein the value of conscientious co-operation, combined with broad thinking, would pay welcome dividends.

The Way Is Clear for Action

DEVELOPMENTS during the past week in the affairs of the American Iron and Steel institute hold great possibilities for the future of the industry. With a popular leader at its head and backed by the pledged support of the most important units of the industry, it would seem that conditions now are ripe for an era of sympathetic understanding and wholehearted co-operation.

Whether or not this high hope is realized depends very largely upon the attitude of mind of the heads of about 20 of the largest companies. Unless the graciously uttered pledges of co-operation are fulfilled in a conscientious manner, the troubles now seriously affecting business will continue. The time for beautiful phrases has passed. The hour for real action is here.

One of the first problems to be attacked is that of competition. Shall we continue to weakly admit that the iron and steel market has reached its limit of development? Shall we assume that no new markets await us and that the only way for us to get additional business is to take it away from a competitor at ruinous prices? If we answer these questions in the affirmative, the industry is doomed.

On the contrary, let us study the possibility of developing new markets for steel. We can well afford to take a leaf from the experience of other industries which have found their markets susceptible of surprising expansion. The steel industry has done something in this line, but not enough to produce real results. The initiative rests with a few leaders in the industry. Unless they act promptly, intelligently and effectively, the wonderfully auspicious start made last week in New York will be of little avail.

By pitching their thoughts on a high plane, centering them on constructive rather than destructive activities, and subordinating selfish interests to those of the industry, the leading steelmakers can capitalize the present favorable opportunity in a way that will benefit producers, customers and public beyond expectation.

How Productivity Is Increasing

AT A recent dinner honoring industrial veterans one concern marshaled more than 500 men who had been in its employ from 25 to 60 years—actors passing off life's stage. "How are they, with their skill and experience,

to be replaced?" asks the department of manufacture of the chamber of commerce of the United States, sounding a note of alarm regarding the effect of the restrictions on immigration.

An idea of how many will be replaced is afforded by a recent study of the mechanization of industry and improvement of organization, made by the national industrial conference board. A comparison of census figures and production statistics shows on an average 67 workers in 1925 produced as much as 100 turned out in 1899, despite shorter hours now.

If productivity continues to increase at the same rate in the next 25 years, the board concludes that at the end of that time it would require only 45 men to produce what now requires nearly 70. The automobile industry in 1925 required less than a third as many workers to produce a given number of cars as in 1914. Other industries show striking gains. In iron and steel production of 100 persons in 1899, including office and management personnel and manual workers, was matched in 1925 by output of 81 persons. The board found 1000 iron screws now are being turned by automatic machinery to one formerly made by hand; spikes are being made by machinery at a ratio of 200 to 1, and in various other processes of the metal trades industry mechanization has increased productivity at a ratio of about 50 to 1 per worker.

Auto Demand Helps Outlook

AS AUTUMN progresses and the usual seasonal fillip in business activities fails to materialize, business men are beginning to inquire more and more anxiously respecting the immediate outlook. As yet no clear-cut satisfying answer has come. Business prognosticators are themselves, confessedly, at sea. Some of them, in fact, affirm sadly that they are sure of one thing only, that the forecasting business has a dismal future because of the growing difficulty of guessing right in this confused era.

Broadly speaking there are two present views of the prospect. One is that the current slackening may be laid entirely at Henry Ford's door. The other is that fundamental conditions have been working into an unhealthy corner and that there they will stay until relieved by definite adjustments to the chill facts of lower prices, severe competition, and reduced returns upon capital.

Unquestionably the latter set of circumstances is confronting business. But it is a trend that has been at work over many months. Many industries and many individual companies cannot escape the necessary readjustments. But there is no reason to suspect that all these situations are going to come to a head simultaneously and bring about a drastic or extended depression. Corrections are going on selectively, and for some great industries, they have been completed.

For any pronounced slackening off in steel, and the automobile industries the Ford "mystery" clearly has been responsible. The suspension of production by the biggest single maker of cars spread uncertainty, excited curiosity and caused a withheld demand. But this is temporary, and reflects no underlying unhealthy symptom. In fact it is constructive that there is an underproduction and a pent up demand in the automobile trade. This in itself is a good augury for 1928.

What Our Readers Are Thinking

Making Jobs for Injured Men

WE FEEL that our contests have accomplished a great deal in interesting our employes in safety work. Malingering has almost been eliminated and our problem is more in seeing that the men do not get back on the job too soon rather than seeing that they get back soon enough.

This brings up the question of returning an injured man to work on a job other than his previous occupation. We have been asked a number of times: "Do you give injured employes light work in order to save lost time?" I do not like the term "light work" in this connection and would rather call it "special work," for that is what it is in our case. If a man is injured in such a way that it is impossible for him to perform his regular work without aggravating his injury and the foreman of his department can rearrange his men in such a way that this man can work satisfactorily and someone else in the department do his regular job until he is sufficiently able to handle it himself, this is perfectly legitimate. For instance, if a man had a hand injury and his regular job required the use of both hands at all times he might be temporarily transferred to a lever job which required the use of only one hand, or in the case of construction work a laborer might act temporarily as water boy and the regular water boy be transferred to the labor gang.

In no case shall a foreman make a job that did not previously exist for an injured employe. The convalescent employe must be able to perform 100 per cent the job to which he is assigned.

So far this year our severity has been reduced about 66 per cent and our frequency approximately 26 per cent. This is a comparison of the experience of the first eight months of this year with the first eight months of last year. We believe that our competitive safety campaign has had considerable influence on the reduction.—E. F. BLANK, *Jones & Laughlin Steel Corp., Pittsburgh, in paper read at National Safety Conference, Chicago, Sept.* 26-30.

IRON TRADE REVIEW

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E. L. SHANER, Editor. — *J. D. PEASE, Advertising Director.* — *F. F. LIGHT, Circulation Manager.*

Mix Business With Pleasure at Pinehurst. Page 1125.

A ROBUST, buoyant personality takes the helm of the American Iron and Steel institute, as indicated in the report, beginning on page 1085, of the election of Charles M. Schwab to the presidency of that organization. Remember Schwab, with extraordinary zest and vitality, uniting all the many factors in the great shipbuilding achievement during the World war, then giving credit to "the boys" who worked with him, and you may surmise the spirited leadership that he will bring to the institute. He is a genius for obtaining co-operation.

The Readers' Page

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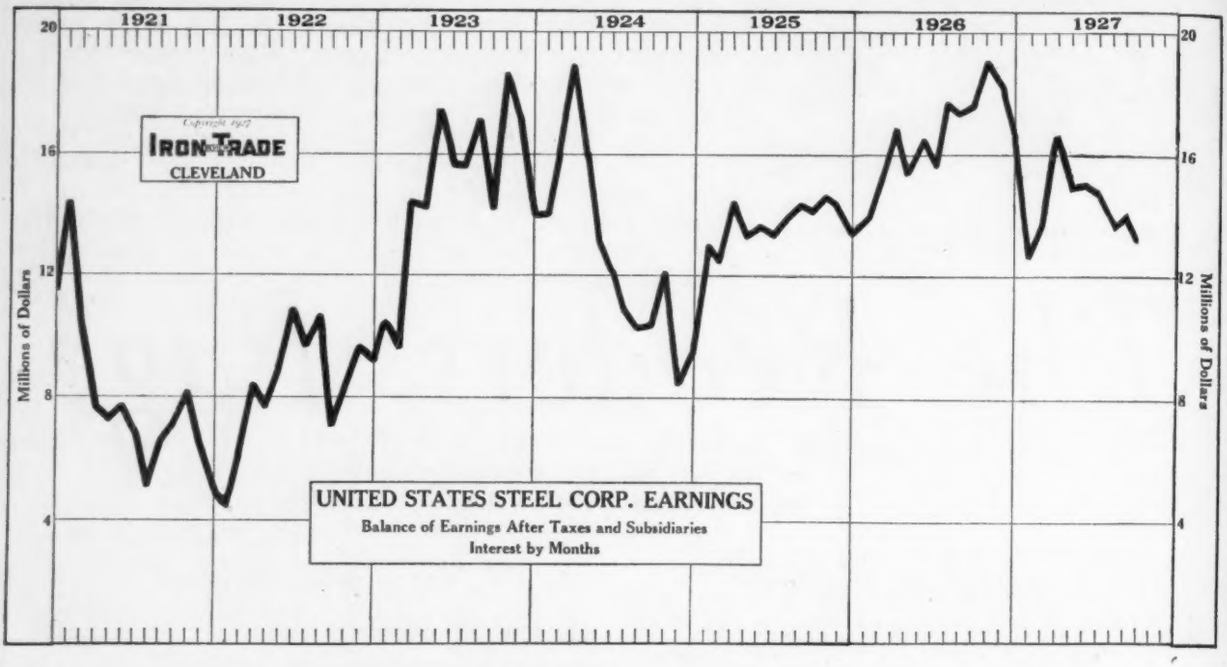
The Business Trend



Profit Trend Downward

By JOHN W. HILL, Financial Editor

ALMOST without exception earnings of important steel companies, reporting for the third quarter of 1927, were unsatisfactory. Compared with preceding quarters and with the corresponding period last year, declines were shown. This is in accordance with expectations, in view of the material recession in operations, in demand and in prices currently prevailing.

PRICES have slumped to the lowest ebb of any time since 1916, with the exception of a brief period during the 1921 depression. Profits may be consistent with low prices if volumes are sufficiently great. But volumes also have shrunken. There is much conflicting testimony respecting the cause. But the most convincing evidence is that the slump, in large measure, reflects the temporarily slackened pace of the automobile industry.

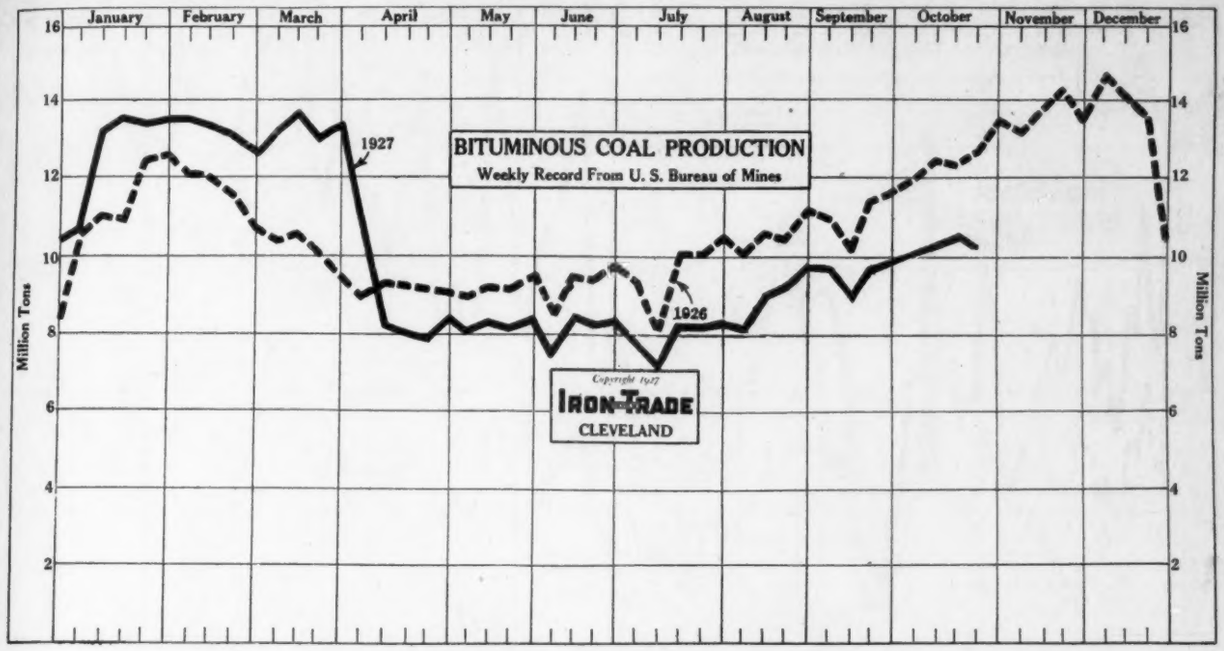
DURING the third quarter total earnings of the United States Steel Corp. were $41,373,831. This compares with $46,040,460 in the preceding quarter and with $52,626,826 in the third quarter of 1926. Net earnings for the corporation, before dividends, were $21,585,425 against $31,709,905 earned after charges, and before dividends, one year ago.

AS SHOWN by the accompanying chart, total monthly earnings have fluctuated rather sharply during the past year. They dropped with a thud from November to January. This decline was due to the recession in steel mill operations late last year. That decline also closely corresponded to a falling off in automobile production in the final weeks of 1926.

EARLY spring brought recovery in the steel industry and this is mirrored in the total earnings by months of the United States Steel Corp. But with the appearance of summer the industry entered into the doldrums which it has not yet shaken off. Profits have declined to the lowest ebb since early 1925, when steel was slowly swinging out of the 1924 slump which had seized business.

THE current slump in trade is not traceable to anything the steel producers have done or failed to do. Certain factors in the automobile industry are responsible for what has happened. Meanwhile, it may be noted that the reduced production of automobiles this year has created an undersupply. It is one of the great constructive factors of the immediate outlook that an accumulated demand for motor cars exists at the present time.

The Business Trend

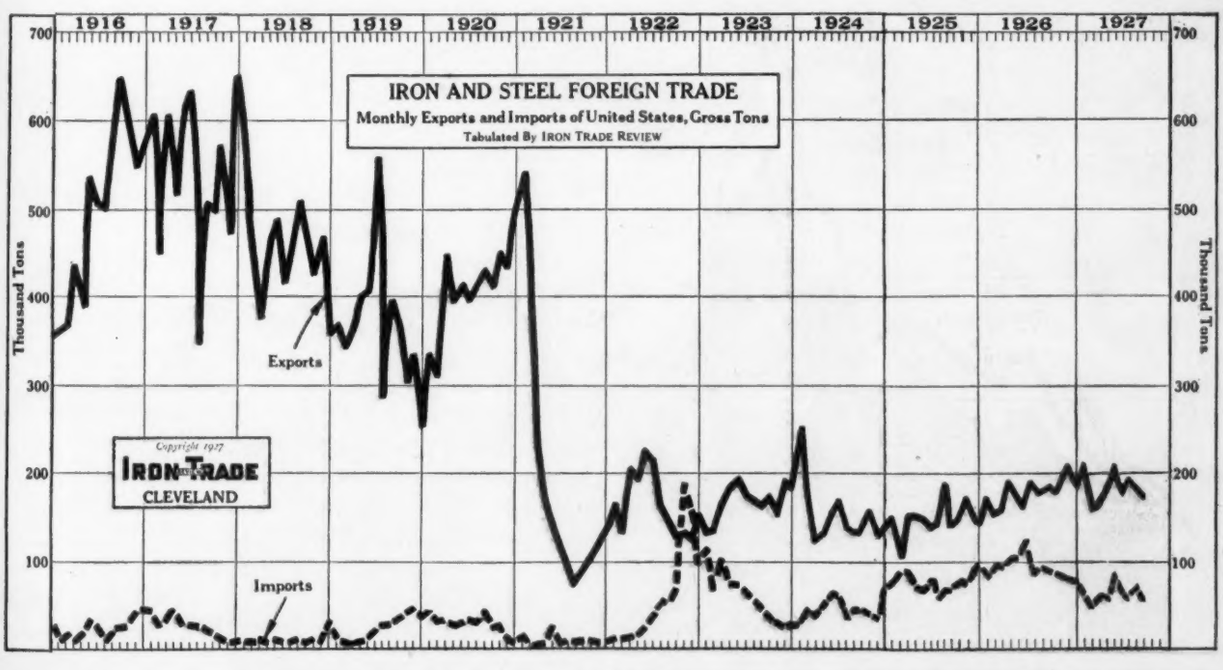


Bituminous Coal Output

PRODUCTION of bituminous coal is continuing to run well above the 10,000,000-ton mark weekly. In the week ended Oct. 22 aggregate production was 10,283,000 tons compared with 10,550,000 tons in the preceding week and 10,286,000 tons in the week ended Oct. 8. Production is running about 18 per cent under that of 12 months ago. Because of the substantial amount of stocks still on hand and the current slackness of certain important industries the demand for coal continues slack.

Steel Foreign Trade

DECLINES were reported for both exports and imports of iron and steel in September. Exports for the month totaled 166,352 tons compared with 175,636 tons in August. Imports were 58,464 tons in September compared with 68,386 tons in August. Total exports for the nine months ended Sept. 30 were 1,664,358 tons while imports totaled 571,894 tons. During September scrap was the principal export with a total of 30,084 tons. Imports of pig iron are running far below the 1926 levels.



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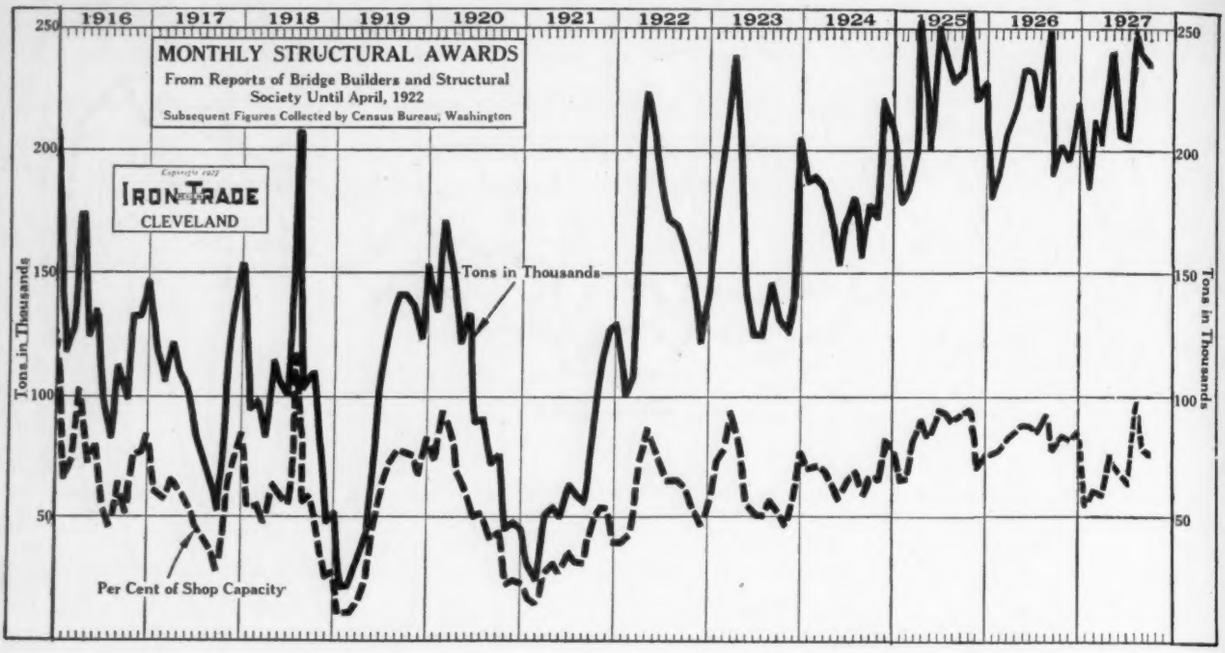
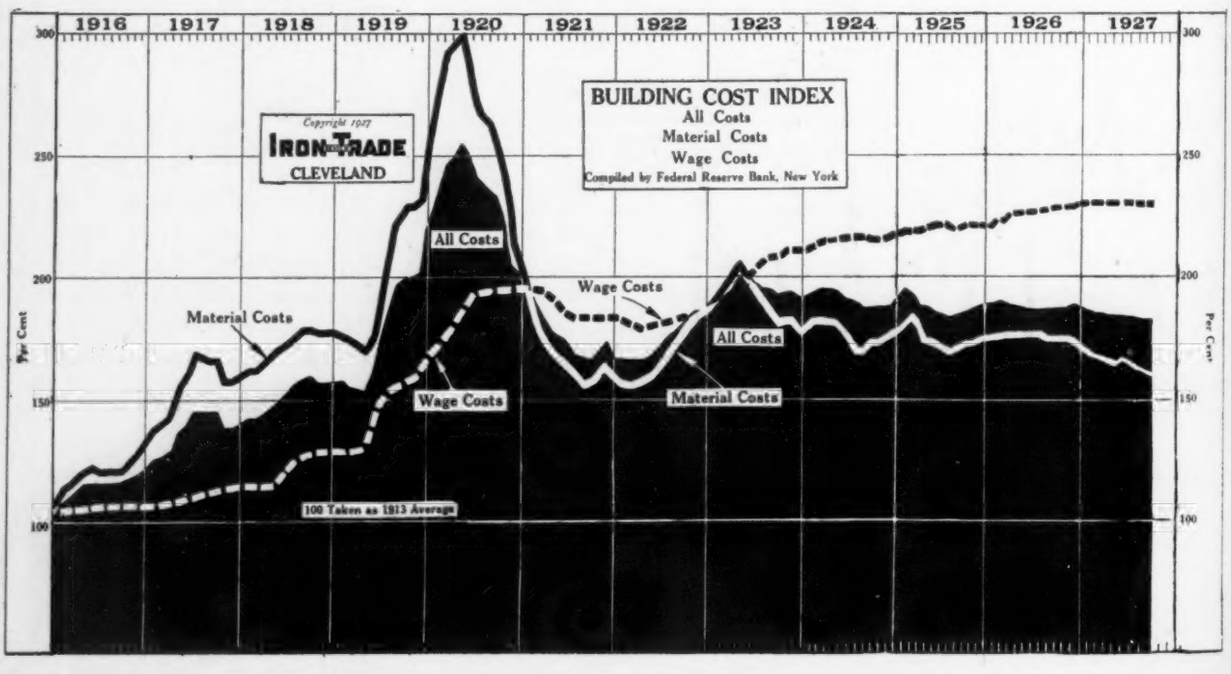

MONTHLY STRUCTURAL AWARDS
From Reports of Bridge Builders and Structural Society Until April, 1922
Subsequent Figures Collected by Census Bureau, Washington
IRON TRADE
CLEVELAND
Tons in Thousands
Per Cent of Shop Capacity
Tons in Thousands
1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927
250 200 150 100 50

Structural Awards

NEW orders for structural steel for September were computed at 241,000 tons compared with 248,000 tons in August and with 187,600 tons in September, 1926. The per cent of shop capacity, represented by orders for the month was was 76 per cent, compared with 78 per cent one month before and 69 per cent one year ago. The high level of structural awards during this year has been one of the most encouraging factors in the iron and steel situation as well as general business.

Building Costs

BUILDING costs throughout the country continue at a level only a little less than the prewar base. The index of all costs of building, as computed by the federal reserve bank of New York stands at 188 per cent of the 1913 level. This was unchanged from the preceding month. A small decline, however is shown in the cost of building materials which stands at 160 per cent of the 1913 level compared with 161 per cent one month before. Wage rates for building and labor continue at the peak.



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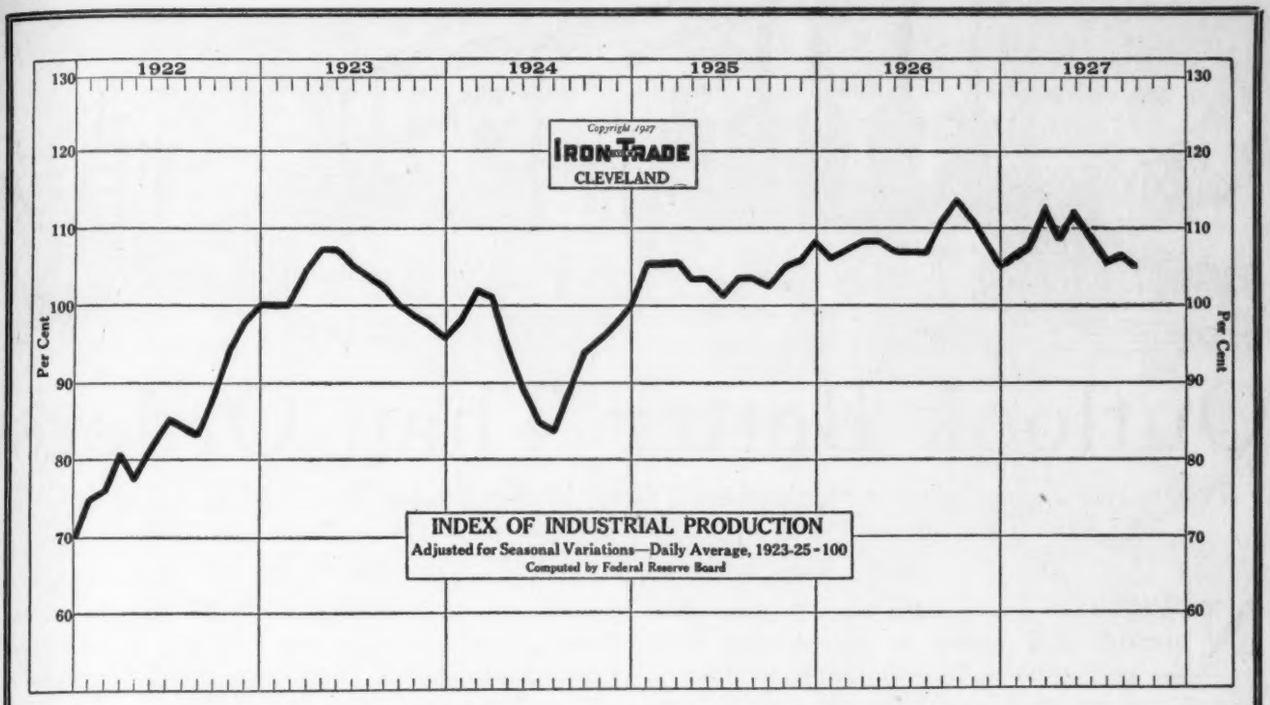
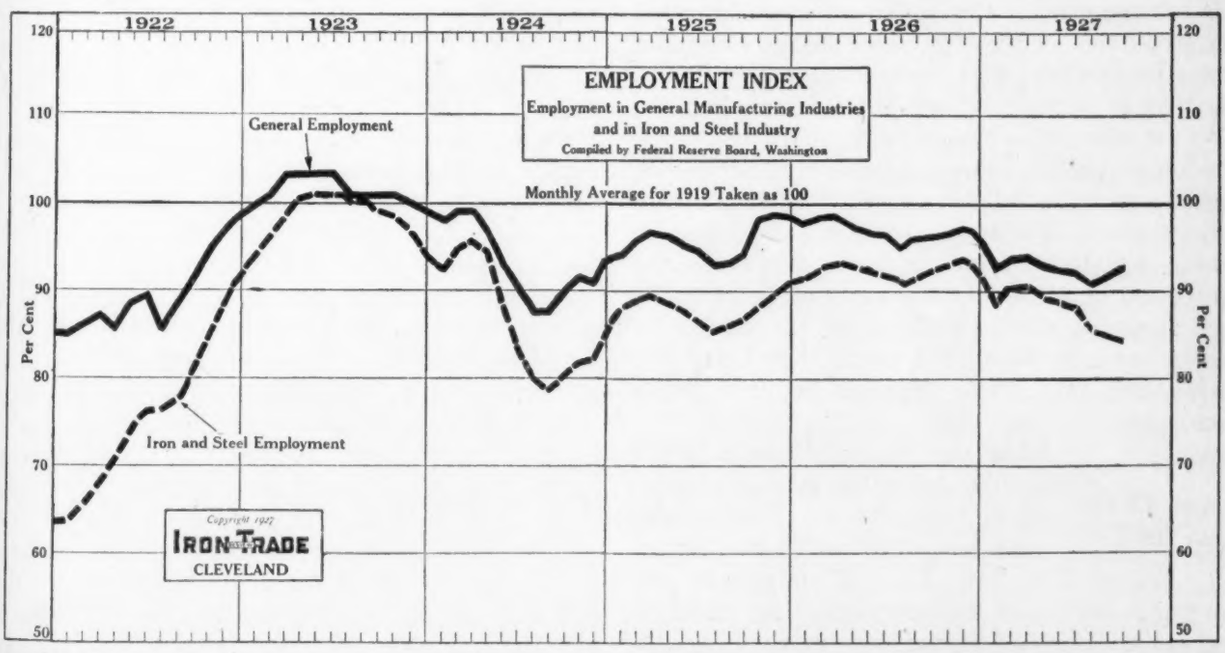


Production Index

THE federal reserve board's index of manufacturing production, in which allowance is made for usual seasonal variations, decreased between August and September. Production of iron and steel was in smaller volume in September than in any month since September, 1925. There were also decreases from August to September in the output of nonferrous metals, automobiles, and rubber tires, while textile, and leather industries continued active following prolonged depression.

Employment Index

GENERAL employment in factories throughout the United States increased somewhat during September, but in the iron and steel mills there was a further small decline. The index of iron and steel employment stood at 85 in August and in September it had dropped to 84.7. One year ago there was an increase in September and the index of employment in iron and steel mills advanced to more than 93. Total employment index stood at 91.2 in August and 91.9 in September.



Outlook Better Than Orders

Prospective Tonnage before Steelmakers is Good but Orders for Prompt Rolling Continue Light — Talk Firmer Prices — October Pig Iron Daily Rate Declines — Pipe Work is Large — Western Roads Buy Rails — Ore Movement Off

NOVEMBER opens with the finished steel markets still better in the promise than the performance. Considerable tonnage is opening up in pipe, over 200,000 tons in gas lines alone being projected or imminent, the railroads continue to buy satisfactorily for 1928 track programs, and by the grace of good weather structural steel demand is seasonally high. But orders for immediate shipment warrant no more than a 65 to 67 per cent general operating rate.

A stiffer attitude looms in prices. Producers are fresh from last week's American Iron and Steel institute meeting, where destructive price competition was roundly denounced and a constructive, co-operation spirit displayed. Third quarter financial statements, revealing some losses and many sharp reductions in earnings, emphasize the proximity of selling prices and costs.

October continued the decline which has marked the production of pig iron since May. At 90,652 tons, the October daily rate compared with 92,750 tons in September and 107,555 tons last October; it was the lowest rate since August, 1925. The longer month, however, brought October tonnage up to 2,810,231 tons, against 2,782,500 tons in September. For 10 months pig iron production stands at 30,927,257 tons or 6 per cent under the like period of 1926. At the close of October 175 blast furnaces, or 48.4 per cent of the total serviceable, were in blast, the percentage being the lowest since June, 1925. The loss in active stocks from September was six.

South Drops Iron to $16

Little pig iron has been sold the past week but the market setup is more competitive. Birmingham producers have cut $1.25 per ton, to $16, base, Birmingham, for November-December delivery, enabling them to compete more evenly in northern markets. Southern iron now is $19.69, delivered Cincinnati, against $19.65 to $19.90 asked by lake furnaces. Another cargo of lake iron is being unloaded at Chicago and offered at 50 cents under the $18.50, Chicago, market. The United States Cast Iron Pipe & Foundry Co. is credited with purchasing 25,000 tons of iron at $16, base, Birmingham.

Tonnage In Pipe Jobs

An award is pending on the gas line from Amarillo, Tex., to Denver, requiring 100,000 tons of pipe. Other live projects include the Roxana Petroleum Co.'s 51,000-ton line, the proposed gas line from Colorado to Salt Lake City taking 35,000 tons, a line from the Texas Panhandale requiring an unstated tonnage and a riveted pipe line in New Jersey needing 30,000 tons of plates.

Curtailed production is the reaction of some beehive coke producers to the present weak market, which is unchanged at $2.75 to $3 for standard furnace coke. More foundries are turning to cheaper grades of foundry coke, available at $3.75 to $3.85.

Warehouses in most centers have revised their extras on cold finished bars to correspond to similar action by the mills recently. Extras paid by shafting makers on hot rolled hexagons also have been revised.

French cast iron pipe is again competing in eastern markets, having been specified for jobs requiring 6000 tons and being low on 2200 tons at Albany, N. Y. Domestic cast pipe prices tend to react from their recent extreme lows.

Rail Orders Are Heavy

From 150,000 to 175,000 tons of rails has been bought in the past week by railroads entering Chicago, with western mills booking about one half. Included are 60,000 tons by the Burlington and 30,000 tons by the Union Pacific. Current inquiry for rails approximates 40,000 tons, with the New York Cen-

The Market Section

Comparative Prices of Iron, Steel and Coke

Representative Market Figures for This Week, Last Month, Three Months and One Year Ago

	Nov. 2, 1927	Oct., 1927	Aug., 1927	Nov., 1926
PIG IRON				
Bessemer, valley, del., Pittsburgh	$19.76	19.76	20.26	22.01
Basic, valley	17.00	17.00	17.50	18.75
Basic, eastern del., eastern Pa.	19.50	19.50	19.75	22.50
*No. 2 foundry, del., Pittsburgh	19.26	19.26	19.26	21.36
No. 2 foundry, Chicago	18.50	18.75	19.50	21.00
*Southern No. 2, Birmingham	17.25	17.25	17.25	20.00
*Southern Ohio, No. 2 Ironton	20.00	19.00	19.00	20.00
**No. 2X, Virginia furnace	21.50	21.50	21.50	22.75
**No. 2X, eastern, del. Phila.	20.76	20.66	21.26	23.51
Malleable, valley	17.50	17.50	17.50	19.75
Malleable, Chicago	18.50	18.75	19.50	21.00
Lake Superior charcoal, del. Chicago	27.04	27.04	27.04	27.04
Gray forge, val., del., Pittsburgh	18.76	18.76	18.76	21.01
Ferromanganese, del., Pittsburgh	94.79	94.79	94.79	104.79
*1.75 to 2.25 silicon. **2.25 to 2.75 silicon.				
COKE				
Connellsville, furnace, ovens	2.85	2.85	3.00	4.75
Connellsville, foundry, ovens	3.75	3.75	4.00	5.85
SEMIFINISHED MATERIAL				
Sheet bars, open-hearth, Youngstown	34.00	34.00	33.75	36.00
Sheet bars, open-hearth, Pittsburgh	34.00	34.00	33.50	36.00
Billets, open-hearth, Pittsburgh	33.00	33.00	33.00	35.00
Wire rods, Pittsburgh	42.00	42.50	43.00	45.00
FINISHED MATERIAL				
Steel bars, Pittsburgh	1.75	1.75	1.80	2.00
Steel bars, Chicago	1.85	1.85	1.95	2.10
Steel bars, Philadelphia	2.07	2.07	2.12	2.32
Iron bars, Philadelphia	2.07	2.07	2.12	2.22
Iron bars, Chicago	1.85	1.90	2.00	2.00
Shapes, Pittsburgh	1.75	1.75	1.80	2.00
Shapes, Philadelphia	2.07	2.07	2.02	2.22
Shapes, Chicago	1.85	1.85	1.95	2.10
Tank plates, Pittsburgh	1.75	1.75	1.80	1.90
Tank plates, Philadelphia	2.07	2.07	2.12	2.22
Tank plates, Chicago	1.85	1.85	1.95	2.10
Sheets, black, No. 24, Pittsburgh	2.90	2.95	3.00	3.10
Sheets, blue anl., No. 10, Pittsburgh	2.10	2.15	2.25	2.40
Sheets, gal., No. 24, Pittsburgh	3.75	3.80	3.85	3.95
Sheets, black, No. 24, Chicago	3.05	3.10	3.15	3.25
Sheets, blue anl., No. 10, Chicago	2.30	2.35	2.40	2.55
Sheets, galvanized, No. 24, Chicago	3.90	3.95	4.00	4.10
Wire nails, Pittsburgh	2.55	2.55	2.55	2.65
Wire nails, Chicago	2.60	2.60	2.60	2.70
Tin plate per base box, Pittsburgh	$5.30	5.30	5.50	5.50
OLD MATERIAL				
Heavy steel, Pittsburgh	14.50	14.50	15.00	17.00
Heavy melting steel, eastern Pa.	14.00	14.00	13.75	15.95
Heavy melting steel, Chicago	11.50	11.75	12.35	13.00
No. 1 wrought, eastern Pa.	15.75	15.75	15.95	17.00
No. 1 wrought, Chicago	11.20	11.40	13.45	14.10
Rails for rolling, Chicago	14.50	14.70	15.00	16.50

Composite Market Average

The Fourteen Leading Iron and Steel Products Included are Pig Iron, Billets, Slabs, Sheet Bars, Wire Rods, Steel Bars, Plates, Structural Shapes, Black, Galvanized and Blue Annealed Sheets, Tin Plate, Wire Nails and Black Pipe

This week (November 2, 1927)	$35.51
Last week (October 26, 1927)	35.51
One month ago (October, 1927)	35.67
Three months ago, (August, 1927)	36.25
One year ago (November, 1926)	38.03
Ten years ago (November, 1917)	58.29
Fourteen years ago (November, 1913)	24.02

tral's 175,000 tons not yet placed. October, with less than 50 to its credit, was the lightest month in years in freight car buying.

The Lake Superior iron ore movement which is drawing to a close for the season is likely not to exceed 52,000,000 tons, compared with 60,000,000 tons last year. The movement to Nov. 1 this season, totaling 49,110,133 tons, is 10 per cent less than in the comparable period in 1926.

Wage rates at unionized sheet and tin plate mills present the phenomenon of rising 3 per cent, due to carryover of higher-priced business from last spring, at a time when the sheet market is distinctly softer. Individually larger sheet orders have been booked at Pittsburgh but the aggregate is no higher. Blue annealed sheets at Chicago are down to a range of 2.30c to 2.35c. Automotive demand for sheets is light.

The IRON TRADE REVIEW composite of 14 leading iron and steel products is unchanged this week at $35.51.

Late News Flashes

Carnegie Operations in Valley Gain

Youngstown, O., Nov. 1.—Steel output among independent plants here is unchanged this week, 31 open hearths operating out of 53, but Carnegie Steel Co. has increased its operating rate slightly. Independent sheet mills are operating at 74 per cent of capacity, compared with 79 last week. Tin mills are at 75 per cent of capacity, and strip at 65. Thirteen pipe mills are busy out of 18 units.

Will Meet Dec. 7 on Barrel Revision

Washington, Nov. 1.—A steel barrel revision conference has been called for Cleveland, Dec. 7, by the simplified practice division, department of commerce.

Revise Extras on Hot Rolled Hexagons

Pittsburgh, Nov. 1.—Revised extras on hot rolled hexagons, corresponding to recent revision in cold finished extras, are in force. One maker states that only sales to shafting makers are affected.

Southern Steelmaking Rate Is Improved

Birmingham, Ala., Nov. 1.—Open-hearth steel production here is greater now than for several months. Some finishing departments, however, are slower. Car production is light. Fabricating shops are operating at fair rates on small, local projects.

Lamont Urges Cut in Corporation Levy

Washington, Nov. 1.—Robert P. Lamont, president, American Steel Foundries, Chicago, and a member of the tax committee of the chamber of commerce of the United States, appeared today before the house ways and means committee and urged a reduction in the corporation tax and repeal of the war excise and federal estate taxes.

Current Rolled Steel Prices

PRICES, CENTS PER POUND, UNLESS OTHERWISE STATED

Semifinished Material

Prices per gross ton

BILLETS AND BLOOMS

4 x 4-inch base

Pittsburgh, open-hearth	$33.00
Pittsburgh, bessemer	33.00
Youngstown	33.00
Cleveland	33.00
Philadelphia	38.30 to 39.30
Chicago	33.00
Forging, Pittsburgh	39.00
Forging, Philadelphia	43.30 to 44.30

SHEET BARS

Pitts., Young., and Cleve.	$34.00

SLABS

Pitts., Young., and Cleve.	$33.00

WIRE RODS

Pittsburgh	42.00 to 43.00
Cleveland	40.00
Chicago	42.00 to 43.00

Standard extras, $5 for screw stock: $15 for acid wire rods. Carbon extras, $3 for 0.20 to 0.40; $5 for 0.41 to 0.55; $7.50 for 0.56 to 0.75; $10 over 0.75.

SKELP

All grades, Pittsburgh	1.75c to 1.80c

Standard Structural Shapes

Pittsburgh	1.75c
Philadelphia	2.07c to 2.17c
New York	2.04c to 2.14c
Chicago	1.85c
Cleveland	1.94c
Birmingham	1.90c to 2.00c
Pacific coast, c.i.f.	2.40c

Steel Plates

Pittsburgh	1.75c
Philadelphia	2.07c to 2.12c
New York	2.09c to 2.14c
Chicago	1.85c
Cleveland	1.94c
Birmingham	1.90c to 2.00c
Pacific coast, c.i.f.	2.40c

Iron and Steel Bars

Pittsburgh, soft steel	1.75c
Pittsburgh, cold finishing	1.90c
Pittsburgh, forging quality	1.90c
Philadelphia, soft steel	2.07c to 2.12c
New York, soft steel	2.09c to 2.14c
Chicago, soft steel	1.85c
Cleveland, soft steel, mill	1.75c
Cleveland, soft steel, del.	1.80c to 1.94c
Birmingham, soft steel	1.90c to 2.00c
San Francisco, soft steel	2.35c to 2.40c
Pittsburgh refined iron	2.75c to 4.25c
Pittsburgh, reinforcing billet	1.75c to 1.85c
Chicago, reinforcing billet	2.30c to 2.45c
Chicago, reinforc. rail steel	1.90c to 2.00c
Youngstown, reinf. billet, base	1.90c to 2.00c
Chicago, rail steel	1.75c to 1.80c
Mill, rail steel	1.65c to 1.75c
Philadelphia, common iron	2.07c to 2.22c
New York, common iron	2.09c to 2.24c
Chicago, common iron	1.85c to 1.90c

Hoops, Bands, Strips

Hoops, Pitts., 6 in. and under	2.20c to 2.30c
Bands, Pitts., 6 in. and under	2.20c to 2.30c
Bands, Pittsburgh, over 6 in.	2.00c to 2.10c
Hot rolled strip, Pitts., stamping quality, over 6 in.	2.05c to 2.10c
Hot rolled strip steel, Chicago	2.20c to 2.40c
Bands, Chicago, under 6-in.	2.40c
Bands, Chicago, 6 in. and over	2.20c
Cold rolled strip steel, hard coils, 1½ inches and wider by 0.100-inch and heavier base, Pittsburgh, Cleveland	2.90c to 3.15c
Worcester, Mass.	3.40c
Stripsheets, with blue annealed extras, 12 in. and wider, Pittsburgh	2.15c to 2.25c

Cold Finished Steel

Cold finished steel bars, drawn or rolled, Pitts., Chi., c. l.	2.10c to 2.20c
Steel shafting, Pittsburgh, Chicago	2.30c
Cold finished steel bars, Cleve.	2.15c to 2.25c

Chain, Piling, Cut Nails

Cut nails, c.l., f.o.b. Mills	2.80c
Chain, 1-in. proof coil, Pitts.	6.00c
Sheet piling base, Pittsburgh	2.20c to 2.25c

Alloy Steel

Hot Rolled

F.o.b. Pittsburgh or Chicago

To Tonnage Users in Auto. S.A.E. Series Numbers	Industry 100 lbs. Bars
2100 (*½ per cent Ni 0.10 to 0.20 per cent C.)	$2.90 to 3.00
2300 (3½ per cent nickel)	4.10 to 4.25
2500 (5 per cent nickel)	5.00 to 5.10
3100 (Nickel chromium)	3.10 to 3.20
3200 (Nickel Chromium)	4.50 to 4.75
4100 (Chromium molybdenum)	3.05 to 3.15
4100 (Cr. Mo. 0.25-0.40)	3.90 to 4.05
4615 (Ni. 1.50%; Mo. 0.10-0.20)	4.25 to 4.50
5100 (Chromium steel)	3.10 to 3.20
6100 (Cr. V., forging)	4.00 to 4.10
6100 (Cr. V., spring)	3.60 to 3.80
9200 (Silico Mang., spring steel)	3.00 to 3.20
9250 (Silico Mang., spring steel)	3.00 to 3.10
Ni. Cr. V., (Ni. 1½%, Cr. 1% V. 0.15%)	4.00 to 4.10

*Mill number not formally accepted by S. A. E.

Hot rolled alloy billets 4 x 4-inch and over take the same prices per gross tons as same specification of alloy bars per net ton. Sizes from 4 x 4-inch down to 2½ x 2½-inch take same basis plus $5 a ton extra. Billets smaller than 2½ x 2½-inch take bar price on net ton basis.

Cold Rolled

Cold rolled alloy steels take 1c a pound extra over hot rolled when mean carbon is 0.30 or under. When the carbon is above 0.30 the extra for cold rolled is 1.75c, including annealing.

Sheets

SHEET MILL BLACK

No. 24, Pittsburgh base	2.90c
No. 24, Philadelphia, delivered	3.22c to 3.32c
No. 24, Gary, Indiana Harbor	3.00c
No. 24, Chicago, delivered	3.05c
No. 24, Birmingham, base	3.15c

TIN MILL, BLACK

No. 28, Pittsburgh	2.90c
No. 28, Gary base	3.20c

GALVANIZED

No. 24, Pittsburgh base	3.65c to 3.75c
No. 24, Philadelphia, delivered	4.07c to 4.17c
No. 24, Gary, Indiana Harbor	3.85c
No. 24, Chicago, delivered	3.90c
No. 24, Birmingham, base	4.00c

BLUE ANNEALED

No. 10, Pittsburgh base	2.10c to 2.15c
No. 10, Philadelphia, delivered	2.47c to 2.57c
No. 10, Gary, Indiana Harbor	2.25c to 2.30c
No. 10, Chicago, delivered	2.30c to 2.35c
No. 10, Birmingham, base	2.40c

AUTOMOBILE

No. 28, Pittsburgh, base	4.15c

IRON

No. 10, Pitts., blue ann., c.l.	2.90c
No. 24, Pitts., Box annealed, 1-pass cold rolled, carload	3.85c
No. 24, Pitts., gal., c.l.	4.85c

Tin and Terne Plate

Prices per 100-pound box, Pittsburgh

*Tin plate, coke base	$5.30 to 5.50
Gary, Ind., base 10 cents higher.	
Long ternes, primes, No. 24	4.20c

*Price subject to quantity differentials.

Wire Products

To Jobbers in Carloads

Dealers 5 cents per 100 pounds extra

F.O.B. Cleveland and Pittsburgh base

Bright plain wire, No. 9 gage	2.40c
Annealed fence wire	2.55c
Galvanized wire, No. 9 gage	3.00c
Barbed wire, painted	3.00c
Barbed wire, galvanized	3.25c
	Per 100 lbs.
Wire nails	$2.50 to 2.55
Galv'd nails shorter than 1-in.	4.55
Galv'd nails, 1-in. and longer	4.55
Polished staples	3.00
Galvanized staples	3.25

Coated nails, 100 lb kegs, subject to Sept. 1, 1926, extra card over wire nail base.

Woven wire fencing(retailers) 12½ gage, 26-in. high 7-in. bars and 12-in. stays, per 100 rods, f.o.b. Pitts. $20.03

Joliet, DeKalb and Waukegan, Ill., Anderson, Ind., and Chicago prices $1 per ton over Cleveland-Pittsburgh base on products made there; Duluth $2 higher, Worcester, Mass., and Fairfield, Ala., $3 higher.

Rails, Track Material

Standard bessemer rails, mill	$43.00
Standard open-h'th rails, mill	43.00
Relaying rails, St. Louis	24.00 to 31.00
Relay, rails, Pitts., 60 to 70 lb.	25.00 to 27.00
Light rails, 25 to 45, mills	36.00
Angle bars, Chicago base	2.75c
Spikes, railroad, Pittsburgh	2.80c
Spikes, small railroad, 7-16-inch and smaller, Pitts.	2.75c to 2.80c
Spikes, boat and barge, Pitts.	3.10c
Spikes, railroad, Chicago	2.80c
Track bolts, Pitts. stand	70 off list
Track bolts, Chicago	3.80c
Tie plates, Chicago, Pitts.	2.25c

Iron and Steel Pipe

Base Discounts Pittsburgh and Lorain, O. to Jobbers in Carloads

	Black	Galv.
1 to 3-inch butt steel	62	50½
1 to 1½-inch, butt iron	30	13

Indiana Harbor, Ind., and Evanston, Ill., 2 points less, Chicago del. 2½ points less.

Boiler Tubes

Less Carload Discounts—Carloads 4 Points Additional—F.o.b. Pittsburgh Mills

Steel 3¼ to 3¾-inch	38½
Charcoal iron, 3¼ to 4½-inch	5
Seamless hot rolled 3¼ to 3½-inch	46 off

Further discounts of seven 5 per cents for carolads or six 5 per cents for less-carload, on lap welded steel. On seamless hot rolled several more 5 per cents, and on charcoal two 10 per cents to two 10 and one 5 per cents.

Cast Iron Water Pipe

Prices per net ton

Class B Pipe

Six-inch and over, Birming'm	$29.00 to 30.00
Four-inch, Birmingham	33.00 to 34.00
Four-inch, Chicago	39.20 to 42.20
Six-inch to 24-inch, Chicago	35.20 to 38.20
Over 24-inch, Chicago	45.20
Four-inch, New York	40.25 to 41.60
Six-inch and over, New York	37.25 to 38.25
Standard fittings, Bir. base	$100.00

6 to 24-inch, base; over 24-inch, plus $20; 4-inch, plus $20; 3-inch, plus $20; gas pipe fittings, $5 higher.

Class A pipe is $4 higher than Class B

Bolts and Nuts

F.o.b. basing points, Pittsburgh, Cleveland Birmingham and Chicago.

Discounts are for legitimate jobbing or large consuming trade purchasing in full-case lots, apply to lists of April 1, 1927.

CARRIAGE BOLTS

All sizes, cut thread	70 off

Rolled thread ⅝x6 and smaller take 10 per cent lower list.

Eagle list	70 off

MACHINE BOLTS

All sizes, cut thread	70 off

Rolled thread ⅝x6 and smaller take 10 per cent lower list.

Lag screws	70 off
Plow bolts, Nos. 1-2-3-7 heads	70 off
Tap bolts	70 off
Blank bolts	70 off
Stud bolts without nuts	70 off
Stove bolts, 80-10-5 off in packages; 80-10-5 with 2½ off in bulk.	
Tire bolts	60-5 off

NUTS

Semifinished	70 off

HEXAGON CAP SCREWS

Milled	80-10-10 off
Upset 1-in. diam and smaller	85-5 off

SQUARE HEAD SET SCREWS

Milled	80-10 off
Upset, 1-in. diam. and smaller	80-10-10 off

Rivets

Structural rivets, carloads, Pittsburgh and Cleveland	2.75c to 3.00c
Structural rivets, c.l., Chicago	2.85c to 3.10c
**Rivets, 7/16-inch and smaller, Pittsburgh, Cleveland and Chicago	70 and 10 to 70, 10 and 5 off

**Some makers quoting 70 off with freight allowed on 300 pounds or more.

Washers

Wrought c.l., Chicago dist.	$6.70 to 6.90 off
Wrought c.l., Pitts. dist.	6.75 off
Lock washers (dealers')	85-5 off
Lock washers (consumers)	85 off

Pig Iron

Prices Continue To Settle—Alabama Iron Cut $1.25—More Cleveland Iron Arrives at Chicago—Valley Market Untested

THE tendency of pig iron prices still is downward, with a lessening volume of business. Alabama furnaces have made a drastic cut, $1.25 to $16, base, Birmingham, the lowest price quoted there since Oct. 26, 1926. This following the reduction of $1 at Chicago, and 50 cents at Cleveland, indicates the stretch that is being made for orders. The sixth cargo of iron shipped by boat from Cleveland to Chicago, is being unloaded and offered at $18 and under, base, Chicago. Lake furnaces in some instances are offering iron in southern Ohio at $16.50, base, furnace, which still makes it difficult for Alabama furnaces to compete at Ohio river points. The valley market is quoted at $17.50, base, though there is a lack of business, and substantial orders might do better.

PITTSBURGH, Nov. 1.—Pig iron producers express surprise that consumers can get along with so little iron. Many users operating at 25 to 30 per cent explains the situation. Furnace interests find is practically impossible to uncover inquiries and several have nothing to work on at present, even 50 to 100-ton lots of various grades of foundry and malleable iron dwindling in number. The Pennsylvania railroad, having an unfilled tonnage with one valley merchant producer on a $3.15 freight rate to Altoona, Pa., added 100 tons to the order. While the base price, $17.50, valley, was not set aside, the analysis, practically No. 2X, permitted some leeway and a few cents under $18, valley, was paid. The remainder of the Pennsylvania's order, about 100 tons, is understood to have been placed with an eastern Pennsylvania furnace. Carload orders of bessemer iron are becoming fewer. The price is $18, valley. Basic still is nominal at $17. It is understood the Allegheny Steel Co. will require some basic, though no decision has been reached as to whether to buy now.

The average of bessemer pig iron sales prices in September was $18, compared with $18.31 in August, according to W. P. Snyder & Co. The average sales price of basic iron in September was $17, against $17.25 in August.

Boston, Nov. 1.—The $17, base, Buffalo, price is being well maintained in this market. Some foundries are inquiring for first quarter but most furnace interests do not care to quote for that period at present.

New York, Nov. 1.—Sales of pig iron in this territory the past week did not exceed 4000 tons. Current inquiry is not over 600 tons. Included in the inquiries is that of Worthington Pump & Machinery Corp. for 240 tons for its Holyoke, Mass., plant. Newport News Shipbuilding & Dry Dock Co. has closed for about 225 tons. Buffalo foundry iron now is quoted at $16.50 to $17, base, furnace for this district. Eastern Pennsylvania foundry continues $19 to $19.50, base, furnace. Hudson Valley Coke & Products Corp. last Thursday blew out its furnace at Troy, N. Y., making all furnaces idle in eastern New York.

Cleveland, Nov. 1.—Shipments are the most encouraging feature of the pig iron market. A merchant furnace interest reports its October shipments were the best for any month since May. Others, in October, were close to their September rate. New orders are comprised entirely of small, fill-in lots, and the total for the week was less than 7000 tons, or half the volume of business of the week preceding. Inquiries for small amounts are more numerous. A few carloads for prompt shipment were booked for Cleveland melters, at $18, base, furnace. The usual quotation for outside shipment continues $17, base, furnace. Sales below this base for delivery from northern Ohio furnaces into southern Ohio are reported in that district to have been a factor in causing Alabama furnaces to cut their price $1.25 to $16, base, Birmingham. Pig iron at $17, base, lake furnace, can be shipped to Cincinnati at $19.65 to $19.90, depending on the location of the furnace, while the new price on Birmingham iron is equivalent to $19.69 delivered at Cincinnati. Vessel shipments from Cleveland to Chicago led Chicago furnaces to cut their price recently $1, and lower prices on Chicago iron at St. Louis also were taken into consideration at Birmingham.

Pig Iron Prices

Per gross ton

Bessemer, valley furnace	$18.00
Bessemer, del. Pittsburgh	19.76
Basic, valley furnace	17.00
Basic, del., Pittsburgh	18.76
Basic, Buffalo furnace	16.50 to 17.00
Basic, del., eastern Pa.	19.50 to 20.00
Malleable, valley furnace	17.50
Malleable, del., Pittsburgh	19.26
Malleable, del., Cleveland	18.50
Malleable, Chicago furnace	18.50
Malleable, Buffalo furnace	17.00 to 17.50
Malleable, del., eastern Pa.	20.25 to 20.75
No. 1X, eastern del., Phil.	20.76 to 21.26
No. 1X, Buffalo furnace	17.50 to 18.00
No. 1 foundry, Chicago furnace	19.00
No. 2 foundry, valley furnace	17.50
No. 2 foundry, del., Pittsburgh	19.26
No. 2 fdy., Everett, Mass., fur.	19.00 to 21.00
No. 2 foundry, Buffalo furnace	17.00
No. 2 foundry, Chicago furnace	18.50
No. 2 foundry, Granite City	19.50 to 20.00
No. 2 foundry, Ironton furnace	19.00 to 19.50
No. 2 foundry, del., Cleveland	18.50
No. 2 foundry del., Phila.	19.76 to 20.26
No. 2 foundry, N. J., tidewater	19.78 to 21.76
No. 2 foundry, east. N. Y. furnace	18.00 to 20.00
No. 2X, east. N. J., tidewater	19.78 to 22.26
No. 2X, eastern del., Phila.	20.26 to 20.76
No. 2X, foundry, Buffalo furnace	18.00 to 18.50
No. 2X, eastern del., Boston	23.15 to 24.15
No. 2 Alabama, Birmingham	16.00
No. 2 Alabama, del., Cincinnati	19.69
No. 2 Tenn., Birmingham base	17.25 to 18.00
No. 2 Tenn., del., Cincinnati	20.94
No. 2 Alabama, del., Philadelphia	22.01
No. 2 Alabama, del. Chicago	22.01
No. 2 Ala., del. Chicago river-rail	20.18
No. 2 Ala., del. Boston, rail-water	24.16 to 25.16
No. 2 Alabama, del. Cleveland	22.01
No. 2 Alabama, del. St. Louis	20.42
No. 2X, Virginia furnace	21.50
No. 2X, Virginia, del. Phila.	26.04
No. 2X, Virginia, del., Jersey City	26.37
No. 2X, Virginia, del. Boston	26.71
Gray forge, val., del., Pittsburgh	18.76
Low phos., standard, valley	27.50
Low phos., standard, Phila.	25.26 to 27.79
Low phos., copper bearing fur.	23.00 to 24.00
Charcoal, Birmingham	29.00
Charcoal, Superior, del. Chicago	27.04

Silvery iron, Jackson county, Ohio furnace, 5 per cent $24.00; 6 per cent $25.00; 7 per cent $26.00; 8 per cent $27.00; 9 per cent, $28.00; 10 per cent $30.00; 11 per cent $32.00; 12 per cent $34.00; 13 per cent $36.00; and 14 per cent $38.00.

Bessemer ferrosilicon, Jackson county, Ohio, furnace, 10 per cent $32.00; 11 per cent $34.00; 12 per cent $36.00; 13 per cent $38.00; and 14 per cent $40.00; 15 per cent $42.50; 16 per cent $45.00; 17 per cent $47.50.

Buffalo, Nov. 1.—Pending pig iron inquiry amounts to a few hundred tons. Shipments on old orders were sufficient to absorb October output. Denial is made here that Buffalo furnaces have shaded $17 on eastern business. Several consumers have contracted for additional tonnage to be delivered by barge before the close of canal navigation.

Chicago, Nov. 1.—Several round tonnages of pig iron for first quarter have been closed, and inquiry for that period has grown slightly. Little iron remains to be placed in this district for the final 60 days of this year. A Michigan furnace manufacturer has closed on 2500 tons of foundry iron for delivery at a western plant, this order has been split between two sellers. An inquiry of 300 to 500 tons of foundry for an Iowa melter still is open. The price of $18.50, base, Chicago furnace, for No. 2 foundry and malleable, is holding. Several sales of boat iron have been reported at $18, base, Chicago, and under. Another cargo of iron has arrived from Cleveland, the sixth in recent weeks, making the total from Cleveland furnaces around 15,000 tons.

Cincinnati, Nov. 1.—For November and December delivery furnaces in Alabama and Tennessee have cut $1.25 to $16, base, Birmingham. It is not expected, however, that much tonnage will be booked north of the

(*Concluded on Page* 1123)

Coke

Furnaces and Foundries Taking Smaller Tonnages—By-Product Prices Reaffirmed for November

DEMAND for beehive coke has tapered off, with a few blast furnaces issuing partial suspension orders, and foundries taking less tonnage. Some beehive coke producers have curtailed production and are asking the maximum price, $3, for furnace coke, while others are offering surplus lots at $2.75. By-product coke producers have reaffirmed October prices for November.

Pittsburgh, Nov. 1.—Pegged at $2.75 to $3, beehive coke manifests little open market activity. Some makers have so curtailed production they do not have to go below the maximum price. Others occasionally have sold surpluses at the minimum. No blast furnace inquiries are pending; in fact, one or two have issued partial suspensions on contracts, due to slight mechanical difficulties, necessitating slowing down of blast. Sources of supply are not throwing coke thus released on the market, but are holding it on wheels. Non-metallurgical users are closing various size lots, usually at about $2.85. Warm weather hinders the sale and movement of heating coke. More foundries, under necessity of paring costs, are turning to cheaper brands available at $3.75 to $3.85, although occasional small sales are noted at $4 to $4.50.

Production of coke in the Connellsville region in the week ended Oct. 22 was 48,530 tons, compared with 51,860 tons in the preceding week, according to the *Connellsville Courier*.

Boston, Nov. 1.—Coke shipments are picking up, on seasonal developments. Boston and Providence producers have reaffirmed their October prices for November.

New York, Nov. 1.—Demand for coke continues to lag in this territory. Spot beehive foundry coke is quoted at $4.25 to $4.50, Connellsville, for ordinary brands. By-product foundry coke is $8.75, ovens, equivalent to $9.59 to $10.77, delivered at Newark and other northern New Jersey consuming points.

Buffalo, Nov. 1.—Demand for foundry coke is estimated at about 60 per cent of normal. Ovens continue to operate at capacity, with surplus production being stored in anticipation of brisk movement of domestic coke. Foundry coke at Buffalo ovens is quoted at $9.

Detroit, Nov. 1.—Demand for foundry coke is slow, and the outlook is uncertain. Consumers have requirements fairly well covered and are buying little in advance of actual needs. With the motor industry and allied manufacturers slowing down production schedules, foundry activities are being curtailed. Price is steady at $9, ovens.

Cincinnati, Nov. 1.—By-product foundry coke will be unchanged at $7.50, ovens, in November. Domestic grades also will remain on the present basis. Beehive coke from the Wise county and New River fields is moving slowly. Shipments of by-product foundry coke in October were about equal to September. More activity in domestic coke is noticeable, despite mild weather.

St. Louis, Nov. 1.—Warm weather is having a further depressing effect on the coke and coal markets here. The melt is slowing down, and demand for metallurgical coke continues to drag. By-product ovens are operating near capacity, and report larger stocks. Prices are steady.

Birmingham, Ala., Nov. 1.—Demand for foundry coke is holding up. Quotations are firm at $5.50, with spot orders at $6. Central Foundry Co. has taken over its by-product coke works at Holt, Tuscaloosa county, its lease to the Semet-Solvay Co. having expired.

Coke Prices

Beehive Ovens

Prices per net ton

Connellsville furnace	$2.75 to 3.00
Connellsville foundry	3.75 to 4.00
New River foundry	7.00 to 8.00
New River furnace	6.00
Wise county furnace	4.25 to 5.50
Wise county foundry	4.00 to 5.00
Alabama foundry	6.00

By-Product

Foundry, Newark, N. J.; del.	9.59 to 10.77
Foundry, Chicago, ovens	9.75
Foundry, New England, del.	12.00
Foundry, St. Louis	9.75
Foundry, Birmingham	5.50 to 6.00
Foundry, Indianapolis, del.	9.75
Foundry, Ashland, Ky.	7.50
Foundry, Portsmouth, O.	7.50
Foundry, Detroit, ovens	9.00
Foundry, Buffalo, ovens	9.00

Ferroalloys

Market Still Is Lagging—Prices Are Steady

Pittsburgh, Nov. 1.—Ferroalloy specifications only approximate needs as they arise. Spiegeleisen producers report a slight upturn in the specifying rate. No interest is noted for first quarter or first half. Within the next two weeks contracts will be sent out for signatures on 50 per cent ferrosilicon, and expectation is of no change in price; $85, freight allowed, is likely to be the closing level. Other alloys, such as ferrovanadium and ferrophosphorus, will receive similar attention from this time forward.

New York, Nov. 1.—Demand for spiegeleisen continues quiet. The 19 to 21 per cent grade is held at $32, furnace, although in some instances sales have been made at $31. New Jersey Zinc Co. has blown out a furnace at Palmerton, Pa., for relining, leaving one furnace there active on spiegeleisen.

Special ferroalloys are unchanged, except that tungsten is easy at 92c a pound, contained. Tungsten ores are easy, with wolframite as low as $10 a unit, and scheelites almost that far down.

Chicago, Nov. 1.—Ferroalloys are quiet. Only occasional spot sales of spiegeleisen are reported. The 19 to 21 per cent grade is quoted at $30 to $32, eastern furnace.

Refractories

Small, Immediate Lots Mark Most Refractory Business

REFRACTORIES PRICES, PAGE 1152

Pittsburgh, Nov. 1.—Refractory makers, both fire clay and silica, are unable to uncover business other than piecemeal purchases. No new construction in open hearths or blast furnaces is in the offing. Production in the Clearfield, Pa., district has slipped further, to 45 per cent. Other kiln operators, however, are still able to maintain a 50 per cent average. Prices are holding as firmly as they ever do under these conditions. Larger producers believe that no large buying can be inspired by sacrificing prices below production costs.

Starts Automatic Mill

All improvements at the No. 1 hot mill of the Ohio Seamless Tube Co., Shelby, O., have been completed, according to President A. C. Morse, and the mill has been placed in operation. Within the last year the company has practically rebuilt and rearranged the entire plant. The works is now equipped with a new full automatic hot mill and new cold-drawing equipment. The company is operating at approximately 70 per cent. The plant has a daily capacity of 1500 tons of high-carbon and alloy tubes.

Ferroalloy Prices

Ferromanganese, 78 to 82 per cent, tidewater, duty paid	$90.00
Ferromanganese, del., Pittsburgh	94.79
Spiegeleisen, 19 to 21 per cent domestic furnace	30.00 to 32.00
Ferrosilicon, 50 per cent freight allowed	85.00 to 87.50
Ferrochrome, 66-70 chromium, 4-6 carbon, cts. per lb. con., del.	11.50
Ferrotungsten stand. lb. cont.	92.00 to 95.00
Ferrovanadium, 30-40 per cent, per lb. estimated on analysis	3.15 to 3.60
Ferro-carbon-titanium carload, producers plant, net ton	200.00
Ferrophosphorus, per ton, carload, 17 to 19 per cent, Rockdale, Tenn., basis (18%)	91.00
Ferrophosphorus, electrolytic, per ton, carload, 23-25% f.o.b. Anniston, Ala., (24 per cent)	122.50

Plates

More Inquiry for Tank Plates at Chicago—30,000-Ton Pipe Line Project Up

PLATE demand continues moderate. Inquiry for tank plates at Chicago has increased to about 8000 tons. Eight tanks, taking 2400 tons, recently on inquiry at Pittsburgh, are reported as awarded. Bids will be taken shortly on 30,000 tons for a northern New Jersey pipe line. Lake vessels are being laid up and there is some call for repair material.

PLATE PRICES, PAGE 1108

New York, Nov. 1.—The Wanaque pipe line in northern New Jersey, the largest pipe line project in the East for many years, is expected up for bids shortly. Specifications call for 16 miles of 74-inch pipe and four miles of 72-inch pipe, the project to require about 30,000 tons of steel plate. Bids will be taken on riveted, hammer-weld and lock-bar construction. It is expected action will be taken this week on a 3000-ton pipe line at Newark on which O'Gara Construction Co., Newark, is low. Biggs Boiler Works, Akron, O., is reported low bidder on fabricating the pipe for the O'Gara company. Plate demand here continues quiet, miscellaneous buying comprising only small lots for quick shipment. There have been attempts the past week to buy below 1.75c, base, Pittsburgh, but so far as known the mills have held.

Pittsburgh, Nov. 1.—Plate orders are mainly for small tonnages, although occasionally a specification is issued for 1000 to 5000 tons. One large interest is boarding up two of its plate mills, apparently for the winter. The trade here understands that eight 80,000-barrel tanks were awarded for southwestern installation. Biggs Boiler Works, Akron, O., was low on the seven pontoons for federal engineers at Cincinnati, and the Witt-Humphries Steel Co., Greensburg, Pa., is low on 20 sections of 24-inch pipe for Cincinnati. Plate mills here claim they have not quoted less than 1.75c.

Cleveland, Nov. 1.—Some Great Lakes vessels are being laid up and as a result inquiry for plates for repair work is developing. Inquiry is out for 600 tons of plates for a lake freighter. Miscellaneous plate demand is light. A local mill is quoting 1.70c, Cleveland, but other makers are asking 1.75c, Pittsburgh.

Chicago, Nov. 1.—A mild revival has developed in inquiry from the oil country. Inquiry now outstanding for oil tankage is 8000 to 10,000 tons. Manufacturing demand in the Chicago market territory continues active but orders are in small lots, which are difficult to accommodate on rolling schedules. The price of 1.85c, Chicago mills, is quoted on plates for local delivery and for the immediate territory. Some concessions for attractive business are reported in competitive freight territory.

Philadelphia, Nov. 1.—Plate market is enlivened by shipyards bidding on two new ship projects, and also because some good size locomotive buying appears likely soon. Pennsylvania railroad is inquiring for a steamer for the Cape Charles-Norfolk route involving about 1800 tons of steel, and the coast guard will place two or three speed boats involving about 200 tons each. Prices continue at 1.75c, Pittsburgh, except where consumers had a lower price prior to stabilization of the market at 1.75c.

CONTRACTS PLACED

2400 tons, eight 80,000-barrel tanks for southwestern installation, to unknown fabricator.

400 tons, 4 to 18-inch riveted blue annealed sheet pipe line in Alaska for United States stores, to Western Pipe & Steel Co.

300 tons, seven pontoons for United States engineers, Cincinnati, O., to Biggs Boiler Works Co., Akron, O.; 50 tons, 20 sections of 24-inch pipe for same location to Witt-Humphries Steel Co., Greensburg, Pa.

150 tons, steel barge for Pacific Telephone & Telegraph Co., to Wallace Bridge & Structural Steel Co.

100 tons, 20-inch pontoon pipe for Port commission, Oakland, Calif., to Steel Tank & Pipe Co.

The American Society for Testing Materials at present has 515 standard and tentative specifications, as compared with 164 in existence ten years ago. The society has on its membership rolls 67 technical, industrial and trade associations of which 55 are participating in committee work. In addition, 53 associations not members of the society are co-operating in the standardization work.

Semifinished

Specifications and Orders Small—Billet Prices Firm Despite Buyers' Efforts

CURRENT orders and specifications for semifinished steel reflect the generally low rate of finishing mill operations. Demand in October was slightly better than in September. Forward buying is not anticipated until December, consumers being protected with regular sources of supply. Efforts of buyers to develop less than $33 on billets have been successful.

SEMIFINISHED STEEL PRICES, PAGE 1108

Pittsburgh, Nov. 1.—Semifinished steel specifications show no increase. Demand developed a little expansion in October compared with September, owing to slightly better strip steel operations, but no new buying has been noted recently. Buyers of billets have been unable to uncover anything below $33 and that is the level quoted on slabs. Sheet bars are nominally quoted at $34. Forging billet demand is limited. Some of the forge shops are buying small lots at a time on the basis of $39, Pittsburgh. Shipments of wire rods are going out on $42 arrangements. Skelp is quoted at 1.75c.

Philadelphia, Nov. 1.—Billet sales are restricted to occasional small lots. The price is $33 to $34, base, Pittsburgh, for rerollers, plus $5 for forging quality.

New York, Nov. 1.—The average billing price on wire rods in this district is somewhat higher. Consumers who obtained their rods over the third quarter at $41, now in a few cases are paying $42. The old $43, base, Pittsburgh, price continues to be obtained on small lots, but $42 is the usual figure. Demand for rods has fallen off somewhat. Billet demand also is a low rate. Billets continue $33 to $34, base, Pittsburgh, for rerollers, plus $5 for forging.

Youngstown, O., Nov. 1.—Only routine sales feature the semifinished steel trade here. Billets and slabs continue $33, and sheet bars $34, Pittsburgh and Youngstown.

Cleveland, Nov. 1.—Specifications for semifinished steel enable the leading merchant interest here to operate eight of its 14 open hearths. New orders are few and small. Prices are steady.

Chicago, Nov. 1.—Billet specifications have increased slightly from several users. Buying of sheet bars is slightly more active. Small billets are $33, base, Chicago. Wire rods are $42 to $43, Chicago.

The United States exported 13,269 pounds of railroad spikes to Costa Rica in August, out of the total of 838,330 pounds shipped that month.

Iron and Steel Scrap Prices

Corrected to Tuesday noon. Gross Tons Delivered to Consumers

Steel Works Scrap

HEAVY MELTING STEEL	
Birmingham	10.50 to 10.75
Boston (dealers)	8.50 to 9.00
Buffalo, No. 1	14.25 to 14.75
Buffalo, No. 2	13.50 to 14.00
Chicago	11.50 to 12.00
Cincinnati (dealers)	11.75 to 12.25
Cleveland, No. 1	13.25 to 13.75
Cleveland, No. 2	12.75 to 13.25
Detroit, No. 1	11.50 to 12.00
Eastern Pennsylvania	13.50 to 14.00
Eastern Pennsylvania, No. 2	11.00 to 11.50
Bethlehem delivery	13.50 to 14.00
New York (dealers) (railroad)	10.00 to 10.85
New York (dealers) (yard)	6.75 to 7.25
Pittsburgh, No. 1	14.50
St. Louis	11.25 to 11.50
Valleys, No. 1	14.75 to 15.00
COMPRESSED SHEETS	
Buffalo	12.25 to 12.75
Chicago	10.25 to 10.75
Cleveland	12.25 to 12.50
Detroit	10.25 to 10.75
Pittsburgh	14.00 to 14.50
Valleys	14.50
BUNDLED SHEETS	
Buffalo	9.50 to 10.00
Cincinnati (dealers)	9.50 to 10.00
Cleveland	11.00 to 11.25
Eastern Pennsylvania	11.00
Pittsburgh	13.00 to 13.50
St. Louis	7.75 to 8.25
SHEET CLIPPINGS, LOOSE	
Chicago	8.25 to 8.75
Cincinnati	8.50 to 9.00
Detroit	8.00 to 8.50
St. Louis	7.50 to 8.00
STEEL RAILS, SHORT	
Birmingham	12.50 to 13.00
Buffalo	16.00 to 16.50
Chicago	15.00 to 15.50
Cincinnati (dealers)	17.00 to 17.50
Detroit	11.00 to 11.50
St. Louis	15.50 to 16.00
STOVE PLATE	
Birmingham	12.50 to 13.50
Boston (consumers)	12.50 to 13.00
Buffalo	12.75 to 13.25
Chicago (net)	12.00 to 12.50
Cincinnati (dealers) net	9.25 to 9.75
Cleveland	12.00 to 12.50
Detroit (net tons)	11.00 to 11.50
Eastern Pennsylvania	13.00
New York (dealers) (mill)	8.50 to 8.75
Pittsburgh	12.00 to 12.50
St. Louis	13.00 to 13.50
LOW PHOSPHORUS	
Buffalo, billet and bloom crops	16.50 to 17.00
Cincinnati (dealers)	13.50 to 14.00
Eastern Pennsylvania	17.50 to 18.50
Pitts. billet and bloom crops	19.00 to 20.00
Cleveland, billet and bloom crops	17.00 to 17.50
SHOVELING STEEL	
Chicago	11.50 to 12.00
Pittsburgh	11.00 to 11.50
St. Louis	11.25 to 11.50
KNUCKLES, COUPLERS, SPRINGS	
Chicago	13.25 to 13.75
Eastern Pennsylvania	16.00 to 16.50
Pittsburgh	16.00 to 16.50
St. Louis	13.00 to 13.50
FROGS, SWITCHES, GUARDS	
Chicago	13.25 to 13.75
St. Louis	13.75 to 14.25
ANGLE BARS—STEEL	
Buffalo	15.25 to 15.75
Chicago	13.00 to 13.50
St. Louis	11.50 to 12.00

Iron Mill Scrap

RAILROAD WROUGHT	
Birmingham	11.00 to 11.50
Boston (dealers)	10.50 to 11.00
Buffalo, No. 1	12.50 to 13.00
Buffalo, No. 2	14.25 to 14.75
Chicago, No. 1	11.20 to 11.75
Chicago, No. 2	11.50 to 12.00
Cincinnati, No. 1 (dealers)	11.50 to 12.00
Cleveland, No. 1	11.50 to 12.00
Eastern Pennsylvania	15.50 to 16.00
New York, No. 1 (dealers)	12.50 to 13.00
Pittsburgh, No. 1	11.50 to 12.00
Pittsburgh, No. 2	14.50
St. Louis, No. 1	10.00 to 10.50
St. Louis, No. 2	11.25 to 11.50
WROUGHT PIPE	
Boston (dealers)	8.00 to 8.50
Eastern Pennsylvania	12.50 to 13.00
Buffalo	13.00 to 13.50
New York (dealers)	8.25 to 8.75
YARD WROUGHT	
Boston	8.50 to 9.00
Eastern Pennsylvania	15.00 to 15.50
BUSHELING	
Buffalo	12.75 to 13.25
Chicago, No. 1	10.00 to 10.50
Chicago, No. 2	8.50 to 9.00
Cincinnati, No. 1 (dealers)	10.50 to 11.00
Cincinnati, No. 2	7.00 to 7.50
Pittsburgh, No. 1	12.25 to 12.75
St. Louis, No. 1	10.00 to 10.50
MACHINE SHOP TURNINGS	
Birmingham	8.50 to 9.00
Boston	6.00 to 6.50
Buffalo	9.50 to 10.00
Chicago	7.50 to 8.00
Cincinnati (dealers)	8.00 to 8.50
Cleveland	9.00 to 9.25
Detroit	7.25 to 7.75
Eastern Pennsylvania	10.50 to 11.00
New York (dealers)	6.50 to 7.25
Pittsburgh	11.50 to 11.75
St. Louis	6.25 to 6.75
CAST IRON BORINGS	
Birmingham (chemical)	13.00 to 13.50
Birmingham plain	8.50 to 9.00
Boston, (chemical)	10.75
Boston (dealers)	6.50 to 7.50
Buffalo	10.25 to 10.75
Chicago	10.00 to 10.50
Cincinnati (dealers)	8.50 to 9.00
Cleveland	10.50 to 10.75
Detroit	8.50 to 9.00
Eastern Pennsylvania	11.50
Eastern Pennsylvania (chem.)	15.00 to 15.50
New York (dealers)	7.25
Pittsburgh	11.00 to 11.50
St. Louis	9.00 to 9.50
Valleys	13.50
MIXED BORINGS AND TURNINGS	
For blast furnace use	
Boston (dealers)	5.50 to 6.00
Buffalo	10.25 to 10.75
Cincinnati (dealers)	8.50 to 9.00
Cleveland	10.75 to 11.00
Detroit	8.50 to 9.00
Eastern Pennsylvania	10.00 to 10.50
New York (dealers)	7.00 to 7.35
Pittsburgh	11.00 to 11.50
PIPES AND FLUES	
Chicago (net)	7.50 to 8.00
Cincinnati (dealers)	8.00 to 8.50
St. Louis	9.25 to 9.75
RAILROAD GRATE BARS	
Buffalo	11.00 to 11.50
Chicago (net)	10.50 to 11.00
Cleveland	12.00 to 12.50
Eastern Pennsylvania	13.00
New York (dealers)	8.75 to 9.25
St. Louis	11.00 to 11.50
FORGE FLASHINGS	
Boston (dealers)	6.00 to 6.50
Buffalo	11.50 to 12.00
Chicago	9.00 to 9.50
Cleveland (over 10 in.)	12.00 to 12.50
Detroit	9.75 to 10.25
Pittsburgh	13.00 to 13.50
FORGE SCRAP	
Boston (dealers)	6.00 to 6.50
Chicago	14.50 to 15.00
Eastern Pennsylvania	10.50 to 11.00
ARCH BARS AND TRANSOMS	
Chicago (net)	18.00 to 18.50
St. Louis	19.00 to 19.50

Iron and Steel Works Scrap

AXLE TURNINGS	
Boston (dealers)	8.00 to 8.50
Buffalo	12.75 to 13.25
Chicago	10.50 to 11.00
Cleveland	12.00 to 12.25
Eastern Pennsylvania	12.50 to 13.00
Pittsburgh	13.50 to 14.00
St. Louis	8.50 to 9.00
STEEL CAR AXLES	
Birmingham	16.00 to 17.00
Boston (shipping point)	15.50 to 16.00
Buffalo	15.50 to 16.00
Chicago	17.90 to 18.50
Cleveland	16.00 to 16.50
Eastern Pennsylvania	20.00
Pittsburgh	18.00 to 18.50
St. Louis	18.50 to 19.00
SHAFTING	
Boston (shipping point)	14.00 to 14.50
Chicago	16.80 to 17.35
Eastern Pennsylvania	17.50 to 18.00
New York (dealers)	14.00 to 14.50
St. Louis	17.00 to 17.50

Iron Foundry Scrap

CAR WHEELS	
Birmingham, iron	12.00 to 13.00
Boston (consumers)	17.00 to 17.50
Buffalo, iron	13.25 to 13.75
Buffalo, steel	15.50 to 16.00
Chicago, iron	13.25 to 13.75
Chicago, rolled steel	14.25 to 14.75
Cincinnati	13.50 to 14.00
Eastern Pennsylvania	15.50
New York iron (dealers)	12.00
Pittsburgh, iron	14.50 to 15.00
Pittsburgh, steel	16.00 to 16.50
St. Louis, iron	12.50 to 13.00
St. Louis, steel	13.50 to 14.00
NO. 1 CAST SCRAP	
Birmingham, cupola	14.00 to 15.00
Boston	15.50 to 16.00
Buffalo	15.00 to 15.50
Chicago, No. 1 machinery	16.25 to 16.80
Chicago, No. 1 railroad	14.00 to 14.55
Chicago, No. 1 agricultural	14.00 to 14.55
Cincinnati No. 1 machinery cupola (net tons dealers)	14.75 to 15.25
Cleveland, cupola	16.50 to 17.00
Detroit (net tons)	13.00 to 13.50
Eastern Pennsylvania (cupola)	16.00 to 16.50
New York, cupola (dealers)	13.50 to 14.00
Pittsburgh, cupola	14.50 to 15.00
San Francisco, delivered	20.00 to 21.00
Seattle	16.00
St. Louis, railroad	14.00 to 14.50
St. Louis, agricultural	14.00 to 14.50
St. Louis, machinery	14.25 to 14.75
Valleys	16.50 to 17.00
HEAVY CAST	
Boston	15.00 to 15.50
Buffalo (breakable)	13.00 to 13.50
Cleveland	12.50 to 12.75
Detroit (automobile) (net tons)	17.00 to 17.50
Eastern Pennsylvania	16.00
New York (dealers)	11.75 to 12.00
Pittsburgh	13.50 to 13.75
MALLEABLE	
Boston, railroad	14.50 to 15.00
Buffalo	14.75 to 15.25
Chicago, agricultural	12.25 to 12.75
Chicago, railroad	13.00 to 13.50
Cincinnati, railroad (dealers)	12.50 to 13.00
Cincinnati, agricultural (dealers)	11.50 to 12.00
Cleveland, agricultural	15.00 to 15.50
Cleveland, railroad	15.50 to 16.00
Detroit, auto	15.00 to 15.50
Pittsburgh, railroad	14.50 to 15.00
St. Louis, agricultural	11.50 to 12.00
St. Louis, railroad	11.75 to 12.25

Miscellaneous Scrap

RAILS FOR ROLLING	
5 feet and over	
Birmingham	13.00 to 14.00
Boston (dealers)	10.50 to 11.00
Buffalo	16.00 to 16.50
Chicago	14.50 to 15.00
Eastern Pennsylvania	16.00
New York	11.00 to 12.00
Pittsburgh district	17.00 to 17.50
St. Louis	14.25 to 14.75
LOCOMOTIVE TIRES	
Chicago, No. 1	14.00 to 14.50
Chicago, cut	14.50 to 15.00
St. Louis, No. 1	13.50 to 14.00
LOW PHOSPHORUS PUNCHINGS	
Chicago	13.00 to 13.50
Pittsburgh	16.50 to 17.00

Scrap

Continued Lack of Demand Causes Weakness and Prices Decline Further

CONSUMERS of iron and steel scrap have not yet found cause to begin buying and prices continue to weaken. It is a buyers' market and each offer is at a lower level. Some accumulation of railroad offerings is becoming a burden. A few sales are being made in small lots for immediate consumption at unusually low figures. Production is steady.

Chicago, Nov. 1.—Iron and steel scrap is a shade weaker, with the continued accumulation of railroad scrap that has been coming out steadily. The market is unable to absorb this flow. All the larger consumers of scrap in this district are taking material at a relatively lower rate. Market conditions are hardly expected to strengthen until steel mill and foundry operaions show more vigor.

Boston, Nov. 1.—Iron and steel scrap now is a buyer's market. There is an absolute absence of demand for heavy melting steel. The small business actually going on represents effort of dealers to turn stock into cash.

New York, Nov. 1.—Fresh consuming demand for scrap continues spotty, with few orders over 1000 tons. A recent buyer of borings is a Pencoyd, Pa., consumer, who paid $11.75, delivered, a reduction of 25 cents at that point. A Phoenixville, Pa., consumer closed on some turnings at $11, delivered, a reduction of 50 cents from its last price. This consumer is reported to be negotiating on stove plate, while a Harrisburg, Pa., consumer has withdrawn from the market on this material. A Pottsville, Pa., purchaser closed on some yard steel at $11, delivered. Dealers have accordingly revised their buying prices on three or four grades.

Philadelphia, Nov. 1.—Iron and steel scrap buying comprises scattered lots. Prices are unchanged. Several steel companies are offering to buy at materially below the present market but there are no transactions yet. Most melters have sufficient scrap on hand or on order.

Buffalo, Nov. 1.—There has been no tonnage buying of scrap the past month and representative dealers admit they see no such business in prospect until after Jan. 1. Value of heavy melting steel, as fixed in minor transactions and in the minds of the trade, is slightly lower this week.

Pittsburgh, Nov. 1.—Scrap selling has not been at such a low ebb, according to dealers, over a long term of years. It is practically impossible to sell anything, except at such low figures that all profit is lost. Quoted levels in this district all are weak and nominal in the absence of sales, although one nearby important sheetmaker purchased a tonnage of sheet bar crops at $16.50 to $17 and some turnings at $11.50.

Detroit, Nov. 1.—Weakness continues in demand for iron and steel scrap. Consumers are buying in limited quantities only and new business is small. Shipments on old orders, however, are being accepted without delay. While it is believed that the bottom of the market has been reached, the outlook for November is uncertain.

Cleveland, Nov. 1.—More heavy melting steel is moving by water from Detroit to Cleveland and indications are for a good movement before navigation closes. The melt of iron and steel scrap in this district shows no material change from the level of recent weeks. Consumers experience light demand for their products and in turn keep their scrap piles to a minimum. The tendency in prices is toward easiness, but quotations are unchanged in the absence of trading. Valley mills are taking in relatively more scrap than those in the Cleveland district. The advent of the new Ford is expected to quicken demand for scrap before the month is out.

Cincinnati, Nov. 1.—Buyers of scrap are manifesting little interest and indications are sales in November will be light. Dealers are having difficulty obtaining scrap, because small dealers throughout this district are holding it for better prices. Meanwhile, quotations are unchanged, but have not been tested.

Birmingham, Ala., Nov. 1.—Old material quotations are still weak and heavy melting steel is reported at $10.50 to $10.75, delivered in the district. No. 1 cast and stove plate are also in small demand.

St. Louis, Nov. 1.—Iron and steel scrap prices have been reduced further the past week and are close to record low levels of 1921. Sales scarcely test the market. Demand lacks and only occasional small lots are bought. Consumers are exacting as to shipments and tonnages.

Philippine Islands received 38,520 pounds of horseshoes from the United States in August.

Sheets

Business Is More Encouraging—Automotive Demand Still Lacking—Galvanized Easier

A SLIGHTLY better volume of business is reported by sheet mills, orders coming from diversified lines, with demand from the automotive industry comparatively light. Galvanized sheet prices are easier in the Pittsburgh district, as low as 3.65c being quoted in some instances. Valley mills are taking a firmer stand, citing the November-December wage advance as a reason.

SHEETPRICES, PAGE 1108

Pittsburgh, Nov. 1.—A fair amount of sheet business is noted, and more buyers are purchasing ahead. Inquiries pending involve 1000 to 10,000 tons. One for 1000 tons is for delivery over nine months of 1928. Orders are from diversified lines of consumption. A falling off in galvanized sheet demand is seasonal, the tonnage movement being about normal for this time. Sheet mills continue to operate at 60 to 70 per cent, with American Sheet & Tin Plate Co. on a 67 per cent basis last week but scheduling more this present week. In galvanized there has been some departure from 3.75c, certain mills stopping at 3.70c, others going to 3.65c. Black sheet makers hold firmly to 2.90c. Some users continue to claim ability to buy as low as 2.75c, but they place orders with the 2.90c sellers. Blue annealed sheets in strip steel widths and in No. 11 gage or heavier sell at 2.10c but otherwise a 2.15c price rules. Full finished is unchanged at 4.15c.

New York, Nov. 1.—The sheet market enters November with an easy tone. Current quotations are 2.10c, base, Pittsburgh, equivalent to 2.44c, delivered, New York, on blue annealed; 2.80c to 2.90c on black, and 3.65c to 3.75c on galvanized. In certain cases jobbers have paid less for galvanized, but such concessions are viewed as sales commissions. Not much business to test the market is offered.

Youngstown, O., Nov. 1.—Stung by recently published unfavorable financial reports for the past quarter and confronted by a mill wage advance for the next two months, eastern and northern Ohio sheetmakers have swung backward from the pit of low prices. Talk of low prices is disappearing here. The bulk of the tonnages now being shipped from independent mills here is going at 2.90c and some at 2.85c, Pittsburgh,

for common black sheets. Other grades are unchanged, autobody at 4.15c, galvanized at 3.75c and blue annealed at 2.15c to 2.25c. A little more encouraging volume of common black and galvanized sheet orders is in mill hands this week. Independent units began operating Monday and Tuesday mornings at 74 per cent of capacity, against 79 per cent last week. Some large mills are running at about 90 per cent. Two independent plants in the valley are entirely idle this week, others running at 60 to 70 per cent.

Mill owners consider a favorable sign the determination of several important automotive consumers of sheets and strip to begin taking inventory immediately. These consumers are planning to get inventory out of the way to be ready for a busy period toward the end of the year.

Chicago, Nov. 1.—Buying of steel sheets in the territory tributary to Chicago mills is in small lots. Mills are unable to accumulate sufficient business to assure more than a week's operations ahead of current activity. Considerable price resistance is being encountered in galvanized and blue annealed sheets. Blue annealed sheets are quotable at 2.25c to 2.30c, mills, and 2.30c to 2.35c, delivered, Chicago.

St. Louis, Nov. 1.—Producers and distributors of steel sheets report a slowing down in demand, particularly marked in blue annealed and one pass cold rolled. Galvanized material shows more life than other varieties. The leading local producer still is operating its tin plate and sheet mills at capacity. Prices are easier, one-pass cold rolled being quoted at 3.00c, blue annealed 2.25c and galvanized 3.85c, Gary base.

Philadelphia, Nov. 1.—Sheet demand is slow. Blue annealed are 2.10c to 2.15c, Pittsburgh, with a tendency to 2.10c only on widths 36 inches or less which compete with wide strip. Black sheets generally are 2.90c, with lower prices in a few instances. Galvanized sheets generally are 3.75c.

Cleveland, Nov. 1.—Sheet sales have not shown improvement. Indications are the automotive field will become more active. Stamping manufacturers show more interest. Black sheets are 2.90c, Pittsburgh, down to 2.75c, depending upon mill and tonnage. On blue annealed 2.15c is the top except for unattractive specifications.

Machinery Exports Drop During September

Industrial machinery exports in September were valued at $13,077,000, making a drop of $1,300,000 from the Sept. 1926, total of $14,398,000. The decrease is attributed largely to the sharp drop in the exports of oil well machinery, according to the industrial machinery division of the bureau of foreign and domestic commerce which compiled the figures. Shipments of oil well machinery were valued at only $640,681 in September, compared with $1,963,710 in Sept. 1926. Even though it declined in September, the oil well machinery trade for the nine months continues ahead of the corresponding time in 1926.

Exports of metalworking and textile machinery advanced in September, the former amounting to $1,890,635 and the latter, $1,079,748. Exports of metalworking machinery for the nine months ending Sept. 30, totaled more than $3,100,000 in advance of the corresponding time in 1926. Air compressor exports also gained in September, with the valuation for the nine month period being $4,483,902, compared with $3,569,515 for the nine months ending Sept. 30. 1926.

Iron, Steel Output Index Off in September

Washington, Nov. 1.—Iron and steel production index number for September was 110 compared with 117 for August and 132 for September, 1926, taking 1919 as 100 per cent, according to the department of commerce. September production number for "other metals" was 177 compared with 171 for August and 180 for last September. Iron and steel September unfilled orders index number was 30 compared with 31 for August and 38 for September, 1926, taking 1920 as 100 per cent.

To strengthen and enlarge the work of the department of gas engineering, the Indiana Gas association has contributed $50,000 to Purdue university, Lafayette, Ind., payable at $10,000 for five years. The first payment was made in September. The fund was made possible by the cooperation of 16 gas companies in Indiana.

Tin Plate

Orders Are Small—Price Held Firmly By Pittsburgh Interests

TIN PLATE PRICES, PAGE 1108

Pittsburgh, Nov. 1.—Aside from intermittent buying of a few hundred tons at a time to piece out tin plate requirements little is noted in the market. One such order for November-December delivery was received by large interests here last week and while the buyer claimed to have developed some quotations lower than anything reported recently, no sales have been made here below $5.30. While at least two makers are operating at 70 per cent, the average is nearer 65. Activity will be more pronounced as soon as prices for next year are announced, probably in two weeks.

Pipe

Total Line Pipe in Prospect Approximates 200,000 Tons—French Take Cast Order

TOTAL prospective business in line pipe approximates 200,000 tons, the leading inquiry being the long pending Amarillo-Denver line, requiring 100,000 tons. Roxana Petroleum Corp. will buy 51,000 tons, and a northern Colorado to Wyoming line will take 35,000 tons. Cast pipe again is feeling French competition in the East where B. Nicoll & Co. took 6000 tons.

PIPE PRICES, PAGES 1108 AND 1154

Pittsburgh, Nov. 1.—Imminent action on line pipe projects pending involves the probable placement of about 200,000 tons of steel. It is understood that the Amarillo, Tex., to Denver line requiring 100,000 tons, and which has been pending for many months, nears actual award. The Roxana Petroleum Corp. inquiry for 51,000 tons of 6, 8 and 10-inch also nears action. In addition a line from northern Colorado to Wyoming will require about 35,000 tons and an unstated tonnage will be sought for a gas line from the Panhandle district of Texas to eastern Oklahoma.

Buttweld pipe demand is fairly steady, jobbers finding a good turnover. Lapweld demand is held in check by the limited buying of oil country goods. The price situation is the same as in weeks past, and for the past month the leading interest has been meeting competition of smaller producers in naming concessions wherever necessary to obtain orders.

Boston, Nov. 1.—Taking bids for 4000 tons of 4 to 16-inch pipe for Marshfield, Mass., has been practically the only activity of the past week. Private business continues in good volume. Prices for small sizes continue to show a stiffening tendency, offset to some extent by the fact quotations on 16 inches up, have tended to show weakness.

New York, Nov. 1.—Cast pipe demand continues good, with more than 20,000 tons now being figured. One eastern buyer is figuring on 15,000 tons of 4 to 16-inch for several municipalities throughout the East. Question exists, however, whether this will be purchased at one time, as much will depend upon the attractiveness of prices. Another pending lot involves 4000 tons for Boston. B. Nicoll & Co., representing French makers, have taken close to 6000 tons of 8 to 24-inch pipe within the past week, and are low on 2200 tons of 36-inch cast pipe for Albany, N. Y. Prices appear unchanged, although in

some quarters a firmer tendency is noted.

Chicago, Nov. 1.—Private contract buying of cast iron water pipe, which has helped sustain the market for some time in the absence of heavy municipal work, has slumped off slightly as many of the smaller programs are being completed. It is expected that buying will be speeded up again if the present favorable weather continues. The largest outstanding work is the 5880 tons of 30 to 54-inch pipe for Chicago. Most of the contract business is on the basis of $27 to $30, Birmingham.

Birmingham, Ala., Nov. 1.—Cast iron pressure pipe business is a little better by reason of firmer quotations, $28 appearing as the bottom mark with $29 to $30 the public quotation on 6-inch and over sizes. Stock on pipe shop yards still is heavy. Plants are operating about 70 per cent. Soil pipe production shows further loss.

CONTRACTS PLACED

88,000 feet of 6-inch, and 75,000 feet of 8-inch pipe for St. Clair Shores, Mich., divided between United States Cast Iron Pipe & Foundry Co. and National Cast Iron Pipe Co.

730 tons, 4 to 12-inch pipe for Gladstone, Oreg., through A. G. Rushlight & Co., to American Cast Iron Pipe Co.

6000 tons, approximately, involving several orders, placed with B. Nicoll & Co., representing French makers.

350 tons, 12-inch water pipe for the department of water supply, gas and electricity, New York, awarded through N. de Sefano, general contractor, to United States Cast

384 tons, improvements at Burlington, Oreg., involving 2, 4 and 6-inch pipe, to American Cast Iron Pipe Co.
Iron Pipe & Foundry Co.

293 tons, 8 and 12-inch class 250, San Bernardino, Calif., to American Cast Iron Pipe Co.

222 tons, 4 and 6-inch class 250, San Bernardino, Calif., to Pacific States Cast Iron Pipe Co.

CONTRACTS PENDING

New Inquiry and Developments on Projects Previously Reported

15,000 tons, 4 to 24-inch pipe for several municipalities throughout the East, bids asked by a New York buyer.

4163 tons, 6-inch class B, Los Angeles; bids in Nov. 1.

4000 tons, Boston; action expected shortly.

4000 tons, Marshfield, Mass.; bids opened Oct. 26. No awards made.

2200 tons, 36-inch pipe, Albany, N. Y.; B. Nicoll & Co., representing French makers, low bidders.

383 tons, 2 to 6-inch class B Burlington, Oreg.; Keating & Bade, general contractors.

193 tons, 6 to 16-inch class B improvement of Fifty-fourth street, San Diego, Calif.; T. B. Penick & Son, general contractors.

183 tons, 4 and 6-inch class B improvement to Twenty-third street, Santa Monica, Calif.; O. F. Fisher, general contractor.

182 tons, 6 and 12-inch class B, Santa Barbara, Calif.; bids in Nov. 3.

142 tons, 6-inch class B, Phoenix, Ariz.; bids in Nov. 2.

109 tons, 4-inch class B, United States Indian service, department of interior, Fort Duquesne, Utah; bids opened.

100 tons, 4 and 6-inch class B, improvement of Rolando park units No. 4 and 5, San Diego, Calif.; bids opened.

Bars

Rekindling Demand Shows in Several Centers—Implement Makers Most Active Buyers

BETTER buying of steel bars is noted in most productive centers, when compared with the slight activities of the past few weeks. Farm equipment makers are calling for larger tonnages and some other users have enlarged requirements. No large future buying is being done. Prices have not been changed from levels prevailing for some time.

BAR PRICES, PAGE 1108

Chicago, Nov. 1.—Bar mill products are a shade more active. The past week has seen some emergency specifications for finished products, largely from the manufacturers in the Chicago district serving the automotive industry. Specifications from farm equipment makers stand out as the leading demand. Sales of bar products are on a par with the ingot production rate for the district. Specifications have practically ceased from car building shops. Mills rolling bar stock report a fairly consistent demand from the general manufacturing lines in the district.

Soft steel bars are steady at 1.85c, Chicago mills. Some recent attractive offers failed to bring out a lower quotation.

Rail steel bars are showing weakness as demand fails to increase. Operations on the other hand show no sharp decline. Rail steel bars now are quoted 1.75c to 1.80c, a drop of $1 a ton from recent quotations. Bar iron likewise is weaker in the face of continued light demand, and is quoted 1.85c to 1.90c, Chicago.

New York, Nov. 1.—Steel mills report demand for bars in this territory during October was about on a parity with September. At present consumption by car and locomotive builders and by the oil and automobile industries is slow. Other consumers, especially the electrical industry, are doing better. The price of bars continues firm at 1.75c, base, Pittsburgh, for large consumers, while 1.80c and 1.85c are being obtained on small lots.

Buffalo, Nov. 1.—Bar demand shows some improvement. Consumers are buying for shipment during the next two months but purchasing continues cautious. The price is 2.015c, Buffalo. Steelworks operation generally in the Buffalo district ranges from 65 to 75 per cent of capacity with some specialty works running slightly under this range.

Pittsburgh, Nov. 1.—While sales resistance in merchant steel bars is still prominent, better buying rates are encountered. Since large tonnages are absent, they are only better by comparison with the meager purchasing rates which prevailed many weeks. Bar mill operations do not average higher than 55 or 60 per cent. Manufacturers and jobbers alike are keeping "close to shore" when it comes to anticipating their needs. Stocks are not allowed to expand because fairly prompt deliveries can be had at all times. Refined iron bar demand is piecemeal. Buyers operate on a hand-to-mouth basis. Prices start at 2.75c.

Cleveland, Nov. 1.—October sales of bars by most producers were the lowest since July, and November opens with no better prospect. Automotive demand has failed to show expected revival. Bolt, nut and rivet makers are ordering commensurately with 50 to 60 per cent operations. Bars range from 1.75c, Cleveland, to 1.75c, Pittsburgh.

Philadelphia, Nov. 1.—Steel bar demand here is fair. October business was in about the same volume as September. The price is firm at 1.75c, Pittsburgh, for large lots and 1.80c to 1.85c for small lots.

Closes Pittsburgh Office

Cincinnati, Nov. 1.—With a view to centralizing its business at the general offices in Cincinnati, Eaton, Rhodes & Co., pig iron and coke broker, will close its Pittsburgh office. J. G. Walton, who has managed the office for years, will continue his association with the company in Pittsburgh territory. J. C. McCrory also will continue his activity in that area.

Modifies Beam Sections

Additions to and modifications of Carnegie beam sections have been incorporated in a 20-page pamphlet recently issued by the Carnegie Steel Co., Pittsburgh. Additional heavier weights of column sections, lighter weights of beams, a new constant depth section, and a modification of a beam section are announced. Profiles, properties and safe loads for the additions to the new series of structural steel beams and column sections also are included.

Completing Skelp Mill

New York, Nov. 1.—The new skelp mill of the Reading Iron Co., Reading, Pa., is expected to be ready for operation about Nov. 10. This mill has a 16-inch roughing stand and a 12-inch finishing stand.

Structural Shapes

Fairly Good Aggregate of Orders Composed of Small Lots Characterizes Market—Plain Material Prices Appear to Have Steadied

CONTRACTING for structural steel continues at a fairly good rate. Although few large tonnage projects have been placed in the past week a number of attractive lots are before fabricators such as the Chesapeake & Ohio bridge at Cincinnati taking 7000 tons and a Union Terminal viaduct in Cleveland requiring 18,000 tons. Inquiries brought out in the week were comparable in number and size to those of preceding weeks, indicating a probable continuance of activity through the fourth quarter.

Plain material prices appear to have steadied, with 1.75, Pittsburgh, the minimum on new business in the East and 1.80c, Chicago for sales in that district. Fabricated quotations on attractive work continue keenly competitive.

STRUCTURAL SHAPE PRICES, PAGE 1108

Pittsburgh, Nov. 1.—Small lettings were awarded structural shape fabricators this week. Each of several report numerous small awards aggregating 200 to 500 tons, without any single items being of sufficient importance to list as a separate job. Structural shapes have not weakened below the 1.75c level here, notwithstanding efforts to uncover a lower figure. Considerable interest has been aroused in this section over the Chesapeake & Ohio railroad bridge at Cincinnati, and the Union Terminal Co. job at Cleveland, both of which projects are to reach the closing stage this week.

Boston, Nov. 1.—Passing through one of the dullest weeks this year, local construction holds more promise for next week, when several big jobs are to be out. Prices hold firm. Plain shapes hold firm at 1.75c, Pittsburgh.

New York, Nov. 1.—While a fairly good tonnage of structural steel is actively pending, mostly apartment house work in this city, the structural market as a whole continues less brisk, a fact attributed by many to seasonal influences. Most fabricators are fairly well booked ahead, offering deliveries in two to three months. The price situation is showing little change.

Chicago, Nov. 1.—Awards of structural shapes for the building industry have declined but fresh inquiry is active. For the Chicago district and points further west, new inquiry during the week totaled 5000 to 5500 tons. A fair number of small orders have been placed in the Chicago and Milwaukee territories. Many of these orders are under 100 tons. New buying of plain material is about the rate of output. Chicago mills quote plain material at 1.85c, but it is understood 1.80c has been done where competition from the East has figured.

Cleveland, Nov. 1.—Structural steel buying in this district in the past week included few projects taking more than 50 or 60 tons each. Bids have been taken on the 18,000-ton Cuyahoga viaduct of the Union Terminals project and an award is expected shortly. Plain material specifying is only fair, but prices hold at 1.75c, Pittsburgh.

Awards Compared

	Total
Awards this week	19,618
Awards last week	33,957
Awards two weeks ago	73,807
Awards this week in 1926	21,394
Average weekly awards, Oct	41,640
Average weekly awards, 1927	36,192
Total awards to date, 1926	1,231,396
Total awards to date, 1927	1,593,505

CONTRACTS PLACED

3500 tons, Duke university building, Durham, N. C., to Virginia Bridge & Iron Co.

3500 tons, assembly plant of the Oakland Motor Car Co., Pontiac, Mich., to the Mahon Steel Construction Co., announced last week as awarded unstated fabricator.

3000 tons, mill for American Glanzstoff Corp., Elizabethton, Tenn., to McClintic-Marshall Co.

1700 tons, bridge at Dardanelle, Ark., to Lakeside Bridge & Steel Co., instead of Badinelle, Ark., as announced last week.

1400 tons, Shedd Aquarium, Grant Park, Chicago, to Vanderkloot Steel Works.

1200 tons, 12 spans for Manila railway, Manila, P. I., to Atlantic, Gulf & Pacific Co.

1200 tons, Nitrogen Corp. building, Hopewell, Va., to Virginia Bridge & Iron Co.

1200 tons, plant for the Intertype Co., Harrison, N. Y., reported last week as awarded American Bridge Co.; project abandoned.

1100 tons, apartment at 67 Munn avenue, East Orange, N. J., to Bethlehem Fabricators Inc.

1000 tons, St. Therese's hospital, Waukegan Ill., including iron stairs and ornamental iron, to New City Iron Works.

1000 tons, apartment at 62 Munn avenue, East Orange, N. J., to Bethlehem Construction Co.

890 tons, apartment, Long Island City, N. Y., to Bethlehem Fabricators Inc.

700 tons, Pan-Hellenic building, Fortieth street, New York, to Harris Structural Steel Co.

700 tons, 4-story garage at 101st street and Broadway, New York, and addition to Rockefeller institute, New York, to Taylor-Fichter Steel Construction Co.

600 tons, factory building, Long Island City, N. Y., to the National Bridge Co.

500 tons, Lang Paper Co. building, Camden, N. J., to Bethlehem Fabricators Inc.

500 tons, small lots in Pittsburgh and other districts, to Fort Pitt Bridge Works.

400 tons, industrial building, LaPorte, Ind., to McClintic-Marshall Co.

400 tons, kiln building for Harbison-Walker Refractories Co., Templeton, Pa., to Jones & Laughlin Steel Corp.

400 tons, four 6-story apartments, New York, to a local fabricator.

350 tons, school No. 90, New York, to Bethlehem Fabricators Inc.

250 tons, several unidentified jobs in Pittsburgh and nearby districts, to Pittsburgh Bridge & Iron Works.

250 tons, miscellaneous work in Pittsburgh territory to Guibert Steel Co.

250 tons, school No. 225, New York, to Bethlehem Fabricators Inc.

225 tons, Maiz Products Co. building, Dubuque, Iowa, to A. C. Woods & Co.

200 tons, Argonaut sales and service station for General Motors Corp. at Brighton, Mass., to New England Structural Steel Co.

170 tons, school No. 137, MacDougall street, Brooklyn, N. Y., to Buckingham Steel Co.

160 tons, Commonwealth Ice & Cold Storage Co. building, Boston, to New England Structural Steel Co.

150 tons, branch of First National Bank, 123 East Eighty-sixth street, New York, to Easton Structural Steel Co.

123 tons, bridge, South Amboy, N. J., to Phoenix Bridge Co.

100 tons, warehouse for Crane Co. at San Francisco, to Dyer Bros.

100 tons, office building and shed, Philadelphia, to Bethlehem Fabricators Inc.

Unstated tonnage, Oxford hotel, Cleveland, through the N. B. Parker Construction Co. to the E. A. Kilroy Iron Works.

CONTRACTS PENDING

New Inquiry and Developments on Projects Previously Reported

18,000 tons, Cuyahoga viaduct, Union Terminal project, Cleveland; bids opened.

1600 tons, bridge, Ocean City, N. J.; Phoenix Bridge Co. low bidder.

1600 tons, 15-story apartment at Eighty-third street and West West End avenue, New York.

1500 tons, junior high school, No. 96, Brooklyn, N. Y.; bids asked.

1500 tons, addition to building for Southwestern Bell Telephone Co., at Kansas City, Mo.; steel bids asked.

1300 tons, 38-story hotel, Brooklyn, N. Y.; previously noted at contemplated, bids asked.

1200 tons, Yonkers building, Chicago.

900 tons, viaduct for Union Pacific railroad at South Eighth street, Seattle; steel bids asked.

850 tons, auditorium, Seattle; bids in.

800 tons, Sisters of Providence high school, Chicago; Morrison & Wallace, Chicago, architects.

600 tons, addition to Hotel Lawrence, Erie, Pa.; revised bids close Nov. 7.

520 tons, hospital, Eureka, Calif.; plans being revised and redwood will be used instead of structural steel.

520 tons, berths 230 D. & E. and 232 A. & B., San Pedro, Calif.; bids in Nov. 2.

500 tons, flue system for United States Smelting, Refining & Mining Co. at Midvale, Utah; steel bids asked.

500 tons, theater, Jamaica, Long Island, N. Y.; bids asked.

400 tons, building for Iron City Electric Co., Pittsburgh; bids being compiled.

400 tons, miscellaneous bridgework, New York Central railroad.

350 tons, 9-story hotel, Redbank, N. Y.

250 tons, building for John Frederick Wadsworth Tire & Gasoline Co., Erie, Pa.; bids being taken.

200 tons, state highway bridge, Runnymede, N. J.

200 tons, theater and store building for Ambridge Amusement Co., Ambridge, Pa.

175 tons, Methodist Episcopal church, Irwin, Pa.; bids being taken.
150 tons, approximately, school, West Hempstead, Long Island, N. Y.
150 tons, Masonic temple, Troy, N. Y.
150 tons, freight station, New York Central railroad, Buffalo.
100 tons, Pittsburgh & Lake Erie Y. M. C. A. building, Newell, Pa.; bids being taken.
100 tons, infirmary buildings for State College, Pa.; bids being taken.
Unstated tonnage, $15,000,000 medical center, Sixty-eighth to Seventieth streets, and Avenue A, New York; Marc Eidlitz & Son Inc., general contractors. Specifications expected shortly.

Says Steelmaking Tops General Belief

Pittsburgh, Nov. 1.—The steel industry is this year producing more steel than at any time it its history, with the exception only of the record year 1926, according to a prominent independent Pittsburgh steel manufacturer who makes a practice of studying American Iron and Steel institute records. It is claimed the rate is considerably higher than has been commonly credited or supposed since production for the first nine months has averaged 88.5 per cent of practical capacity. This is greater than for the same period in 1925 and only slightly below the same period in 1926, the record year.

Production of ingots in the first nine months of 1925, 1926 and 1927, is shown by the institute records to have been 32,378,000, 35,689,000 and 33,500,000 gross tons, respectively.

Tank Building Is Heavy in West Texas

By the end of this year in eleven counties of West Texas, not including the Panhandle region, steel storage tanks with a total capacity of 22,000,000 barrels will have been completed. It is said to be the greatest steel storage tank construction program in the history of the oil industry. More than twenty of the larger producing companies are active in this work of providing large additional storage for their oil. The tanks are of 55,000 and 80,000 barrels capacity. Steel storage tanks already completed in these counties during the last several months are as follows:

Crane, 5,984,000 barrels; Crockett, 55,000; Jones, 55,000; Midland, 755,000; Mitchell, 420,000; Pecos, 586,000; Reagan, 2,947,000; Upton, 2,947,000; Val Verde, 800,000; Ward, 245,000; Winkler, 553,000; total, 14,390,000 barrels.

Those under construction are: Crane, 1,918,000 barrels; Midland, 820,000; Pecos, 80,000; Val Verde, at Del Rio on the Southern Pacific railroad, 3,200,000, including 25 of 80,000 barrels each which will be started soon; Ward, 485,000; Winkler, 1,148,000.

The bureau of census, Washington, has issued a 1925 census of manufactures on stoves, ranges, domestic heating apparatus and steam fittings. Copies of the census may be obtained from the superintendent of documents, government printing office, Washington, for 5 cents each.

Concrete Bars

Spottiness Unchanged in Buying but Large Awards Continue in Prospect

AWARDING of concrete reinforcing bars for construction projects continues spotty, with small lots predominating but a sufficient number of large tonnages to maintain a fair weekly total of business placed. The actual steel award for the St. Louis sewer project involving 7500 tons has been made to Laclede Steel Co. A Pittsburgh building took 1000 tons.

REINFORCING BAR PRICES, PAGE 1108

Pittsburgh, Nov. 1.—While concrete bar lettings this week are uninteresting from a tonnage standpoint, one involving 1000 tons of bar joists has attracted considerable attention. This award went to Truscon Steel Co. for the Grant building here. Bars for the Keystone Athletic club are to be bought this week. Three small jobs are up to replace structures damaged in a recent fire on Penn avenue. Mill prices on concrete bars are unchanged at 1.75c.

Boston, Nov. 1.—Satisfactory tonnage in small lots has continued over the past week in reinforcing steel. Prospects now are that this will continue well into the remainder of the year.

Buffalo, Nov. 1.—Approximately 500 tons of new inquiry is on the market here adding to tonnage about to be placed with reinforcing bar makers. October inquiry has been exceptionally large for the season, with the result that mill operation for November will run well ahead of the average for the season.

Cleveland, Nov. 1.—Competition for the small quantities of reinforcing steel moving in this district has made the price levels uncertain. An insufficient tonnage is being placed to definitely establish a market level. New billet bars are 1.75c, Cleveland mill, to 1.75c, Pittsburgh, for attractive mill lots and for combination mill and stock shipment 2.20c, Cleveland, is named. Rail steel holds at 1.65c to 1.75c, mill.

Chicago, Nov. 1.—Reinforcing bar dealers find inquiry at the average rate of this year, although awards have slumped off slightly. Upwards of 1000 tons of reinforcing bar inquiry is outstanding, some of which will be delayed by financing and other arrangements. Sellers of new billet bars have run into some price resistance and the bottom price of 2.30c has been shaded in several instances. Rail steel bars are quoted at 1.90c to 2.00c, Chicago.

Awards Compared

	Total
Awards this week	13,677
Awards last week	4,223
Awards two weeks ago	5,413
Awards this week in 1926	3,892
Average weekly awards, Oct.	4,602
Average weekly awards, 1927	5,434
Total awards to date, 1926	283,340
Total awards to date, 1927	247,260

CONTRACTS PLACED

7500 tons, 7400 tons rail bars and 100 tons billet steel bars, River des Peres sewer at St. Louis, to Laclede Steel Co.
2300 tons, James river bridge, between Norfolk and Newport News, Va., to McClintic-Marshall Co., through Raymond Concrete Piling Co., instead of 1200 tons as announced last week.
1000 tons, bar joists, Grant building, Pittsburgh, to Truscon Steel Co.
700 tons, Midway hotel at Rockford, Ill., to Truscon Steel Co.
300 tons, buildings for National City Bank and Bank of New York & Trust Co., New York, of which 200 tons went to Concrete Steel Co. through Foundation Co. and 100 tons to Kalman Steel Co. through George A. Fuller Co.
275 tons, filtration plant at Woodlawn, N. Y., instead of Woodlawn, Pa. as noted in the Oct. 20 issue, to Kalman Steel Co.
250 tons, St. Theresa hospital, Waukegan, Ill., to Concrete Steel Co.
250 tons, apartment hotel unit of Chicago Beach hotel, to Inland Steel Co.
250 tons, building for Carpenter Storage, Inc., White Plains, N. Y., to Kalman Steel Co., through Frank N. Goble Inc., White Plains.
220 tons, hotel, Merced, Calif., to Badt-Falk Co.
212 tons, Feuer warehouse, Yonkers, N. Y., to J. C. Rochester Co., New York.
200 tons, Swedish convent hospital, Summerdale avenue, Chicago, to Joseph T. Ryerson & Son Inc.
200 tons, rail and billet steel, garage, Rockford, Ill., to Olney J. Dean & Co.
200 tons, pier shed, Grove street, Oakland, Calif., to Frederick Steel Co.
175 tons, Fairfield Farms Dairy building, Baltimore, to Dietrich Bros.
150 tons, spirals for building for American Can Co., Jersey City, N. J., to Faitoute Iron & Steel Co.
125 tons, apartment and store building, East Chicago, Ind., to Kalman Steel Co.
120 tons, Brooklyn Law school, Brooklyn, N. Y., to Igoe Bros., through the contractor, Thomas O'Reilly.
115 tons, Lockwood school, Oakland, Calif., and a hotel on Turk street, San Francisco, to Frederick Steel Co.
110 tons, city hall annex, Philadelphia, to A. Taylor Co.
100 tons, school, Merchantville, N. J., to Truscon Steel Co.
100 tons, road work in Hudson county, N. J., to Carroll-McCreery Co., Inc.
100 tons, rail steel, apartment building at 6738 Oglesby street, Chicago, to Calumet Steel Co.; P. F. Olsen, Chicago, architect.
100 tons, high school, Walla Walla, Wash., to Northwest Steel Rolling Mills Co.
100 tons, Providence hospital, Seattle, to Pacific Coast Steel Co.
Unstated tonnage, building for Swift & Co., Mineola, N. Y., to Kalman Steel Co.
Unstated tonnage, Zellerbach pulp mill, Port

Townsend, Wash., to Pacific Coast Steel Co.

CONTRACTS PENDING

New Inquiry and Developments on Projects Previously Reported

1200 tons, additional tonnage for James river bridge between Norfolk and Newport News, Va., general contractor, Turner Construction Co.

1000 tons, deck for bridge between Perth Amboy, N. J., and Tottenville, N. Y. General contract to Cornell Contracting Co., New York.

800 tons, National Candy Co. building, St. Louis.

800 tons, deck for bridge between Elizabeth, N. J., and Howland Hook, N. Y. General contract to Albert A. Volk Inc., New York.

500 tons, battalion buildings, Camp Devens, Ayer, Mass.; bids to be opened this week.

500 tons, new addition to Jefferson hotel, St. Louis; Boaz-Keil Construction Co., St. Louis, general contractor.

475 tons, Border street outlet, East Boston, Mass.; general contract awarded C. & R. Construction Co.

400 to 500 tons, bridgework for Union Terminals project, Cleveland; bids asked.

400 tons, Missouri Portland Cement building, St. Louis.

300 tons, store buildings and apartment hotel at Washington boulevard and Crawford avenue, Chicago; McClennan Construction Co. general contractor.

261 tons, roadwork for Texas highway commission, Tom Green county, Texas.

255 tons, Diablo dam, Seattle.

250 tons, Sisters of Providence high school, Chicago; Morrison & Wallace, Chicago, architects.

200 tons, building for Packard Motor Car Co., Pittsburgh; Albert Kahn, Detroit, architect. Bids about to be asked.

183 tons, instead of 250 tons as noted last week, Keystone Athletic club building, Pittsburgh; bids to be closed this week.

150 tons, foundation, Bailey avenue bridge, Buffalo; bids in.

150 tons, building for Hafner Coffee Co., Pittsburgh; bids close Nov. 4.

128 tons, three culverts near Stockton, Calif.; bids opened.

104 tons, bridge near Lamoine, Calif.; bids opened.

100 tons, including 60 tons of bars and 5500 square feet of mesh for Iron City Electric Co. building, Pittsburgh; bids being taken.

100 tons, Butler building, San Francisco; bids in Nov. 3.

100 tons, Catholic school, Buffalo; bids in.

100 tons, Humboldt branch, Y. M. C. A., Buffalo; bids soon.

100 tons, newspaper building, Wilmington, Del.

100 tons, S. S. Kresge Co. store, Steubenville, O.; bids close Nov. 3.

Iron Ore

Lake Movement 10 Per Cent Under 1926—Shipping Season Closing

IRON ORE PRICES, PAGE 1151

Cleveland, Nov. 1.—Shipments of Lake Superior iron ore by water in October totaled 6,722,757 tons, a reduction from 9,337,774 tons in October, 1926, according to the Lake Superior Iron Ore association. The decrease was 28 per cent. The shipments this season to Nov. 1 amounted to 49,110,133 tons, against 54,568,682 tons in the comparable period of 1926, a reduction of 10 per cent. Boats are being laid up and this month will see the lake movement of ore practically closed. The total of all shipments this year is expected to reach 52,000,000 tons. New demand for ore is limited to small fill-in lots of special grades.

Rails, Cars

Awarding of Tonnages on 1928 Rail Programs Dominates Otherwise Dull Market

RAILROADS with Chicago terminals have distributed 150,000 to 175,000 tons of rails on 1928 programs in the past week. Inquiry includes that of the New York Central and 30,000 to 40,000 tons of small railroad needs. Track accessories during the week were inactive. Cars and locomotives continue dull with few small orders going to builders.

RAILROAD TRACK MATERIAL PRICES, PAGE 1108

Chicago, Nov. 1.—From 150,000 to 175,000 tons of standard steel rails have been distributed during the week for 1928 delivery by railroads with terminals in Chicago. It is estimated that 50 per cent goes to Chicago mills. In the distribution of the 60,000 tons for the Chicago, Burlington & Quincy, Illinois Steel Co. was awarded 28,500 tons, Inland Steel Co. 13,500 tons and Colorado Fuel & Iron Co. 18,000 tons. In addition to the New York Central inquiry, approximately 30,000 to 40,000 tons of steel rail inquiry is out, some of which will not be closed immediately. The allocation of the Union Pacific order for 30,000 tons, noted two weeks ago, was made to the Illinois Steel Co., Inland Steel Co. and Colorado Fuel & Iron Co. Miscellaneous orders for light rails have been showing increase in the past 30 days, due to reopening of coal mines in several states. A fair amount of track accessories business is on inquiry and this is expected to increase steadily. Business closed during the week amounted to 5000 to 6000 tons, and largely was in miscellaneous lots.

Chicago district mills find the tendency in the past two years for railroads to increase buying of steel for maintainance and repairs of cars is continuing. Specifications of car builders on pending work have been worked out.

Reports are that the Chicago & North Western, in addition to its formal inquiry for 500 hopper car bodies, is expected to ask bids later for 750 miscellaneous cars. The inquiry has not been issued definitely. The Canadian National Rolling Stock, Inc. wants ten switching engines.

New York, Nov. 1.—While full returns are not available for October, indications point to one of the poorest freight car buying months ever recorded. To date, reported domestic freight car orders for the month are virtually negligible, involving less than 50 cars; and there are few signs of improvement in the immediate outlook. More coaches were bought during the past month than freight cars, if present indications are correct, and if the 25 for export just placed were to be included. Locomotive buying continues slack.

Pittsburgh, Nov. 1.—Coal mine operators buy light rails spasmodically. For the most part, these are ordered in single carloads, and makers report that they are able to obtain $36 without question.

Small spike buying is similar, at 2.80c. Large spikes, quoted in some directions at that price, have sold as low as 2.75c. Tie plates are quoted at 2.25c. Several railroads are inquiring for various track fastenings.

Philadelphia, Nov. 1.—Pennsylvania railroad has distributed orders for a large quantity of tie plates, spikes and other track accessories.

CAR ORDERS PLACED

Ferrocarril del Pacifico, Colombia, 25 coaches, to American Car & Foundry Co.

Nelcroft Coal Co., 200 mine cars, to Bethlehem Steel Co.

LOCOMOTIVE ORDERS PLACED

Chicago, South Shore & South Bend, two 80-ton electric locomotives, to Baldwin Locomotive Works, with electrical equipment to be furnished by Westinghouse Electric & Mfg. Co.

CAR ORDERS PENDING

New Inquiry and Developments on Projects Previously Reported

Chicago & Eastern Illinois, two combination mail and smoking cars.

Colombian government, 23 coaches and six freight cars; bids opened Nov. 25.

Esthonia State railways, 67 cars; bids being taken.

Hauser-Stander Tank Co., Cincinnati, 20 tank cars.

LOCOMOTIVE ORDERS PENDING

Canadian National Rolling Stock Inc., ten switching locomotives; inquiry out.

Colombian government, nine locomotives, with tenders; bids opened Nov. 11.

Esthonia State railways, five locomotives.

United Fruit Co., 1 to 20 electric locomotives.

Steps Up Motor Output

Muskegon, Mich., Nov. 1.—The local plant of the Continental Motors Corp. is on a heavier production schedule following completion of the annual inventory Oct. 29. About 2000 employes were laid off during the inventory period.

Wire

Demand and Production Changed Little and Expected Improvement Is Lacking

WESTERN wire makers find demand definitely stronger, while those in the East have not yet felt the betterment. While fourth quarter promises to be less active than the earlier months, it is expected to exceed the final quarter of 1926. Prices are steady except in a few cases of meeting competition. Deliveries are easy and this prevents buying ahead.

WIRE PRICES, PAGE 1108

Chicago, Nov. 1.—Western producers of wire products report sales and specifications definitely stronger. This increased activity has come largely from agricultural regions in the West. Buying in the South is more scattered, with depression in some localities. Mills make prompt deliveries. Demand for plain wire is fairly well sustained at 2.45c, Chicago or western mill, but wire nails show some weakness at $2.60. Concessions are reported made for some occasional attractive business.

Worcester, Mass., Nov. 1.—Wire drawing mills remain at about the same schedule of 55 per cent with a slight increase in several specialty departments. This is especially true of small bright wire. Expected seasonable increase in specifications has been slow to get underway. There has been an increase, but not to the extent expected. However, the demand is well distributed and prices are firm.

New York, Nov. 1.—Although demand for wire and nails is falling off, so that the last quarter promises to be materially less in volume than the first three quarters, business is considerably better than a year ago, and bookings for fourth quarter are expected to exceed the last quarter of last year.

The price situation is somewhat firmer in nails. Hangovers from third quarter contracts are being cleaned up and new contracts generally are at a higher figure. The 2.55c, base, Pittsburgh, price now is being obtained on a larger share of current shipments. On plain wire 2.40c, base, Pittsburgh, is firm.

Pittsburgh, Nov. 1.—Conditions in the wire industry are largely unchanged from those prevailing over a period of weeks. Buying is piecemeal, and operations continue at 50 per cent. Manufacturers' wire demand in some lines is fairly active, but in connection with fencing has slackened considerably. While wire is firm at 2.40c, nails are not altogether so at $2.55, with some being billed at $2.50 on extensions of old contracts or in meeting competition.

Insolvency of the National Can Co., Tacoma, Wash., is revealed by court filing of a voluntary petition in bankruptcy by H. W. Lueders, president. Sixty-one creditors with unsecured claims of $34,611 are listed while the company's assets are given at $149,593.

Bolts, Nuts, Rivets

Little Change in Demand or Production, with Prices Firm

NUT AND BOLT PRICES, PAGE 1108

Chicago, Nov. 1.—While jobbers' orders for bolts and nuts are not as heavy as recently and are somewhat disappointing, specifications from farm implement buyers continue to hold to a fairly satisfactory rate. Industrial users are specifying for small lots to cover current needs. Large structural rivets are 2.85c on contract, while the spot market is 3.10c, Chicago, for carload lots.

Cleveland, Nov. 1.—October sales of bolts and nuts were slightly better than September, but the upturn was smaller than had been expected and was less pronounced than last year. Rivet business dropped off last month compared with September and a year ago. Current specifications generally are for small lots. Prices are firm on all items.

Pittsburgh, Nov. 1.—In point of tonnage for nut, bolt and rivet makers October was 20 to 25 per cent below September. Operations are maintained at about 50 per cent of capacity, but incoming orders are small. Railroads are not buying, and structural shops specify only current needs. The oil well industry shows no improvement, and jobbers are buying sparingly. Some inquiries are in hand for single carloads of rivets from small buyers who did not contract at 2.75c and on these 3.00c is quoted.

Cold Finished Steel

Better Specifications Coming Out on Larger Automotive Buying

COLD FINISHED PRICES, PAGE 1108

Pittsburgh, Nov. 1.—Specifications are somewhat better in cold finished bars and some of this improvement is traceable to buyers in automotive and allied trade. Diversified consuming lines continue to take piecemeal lots. Jobbers occasionally buy to fill out stocks.

The openly quoted market is unchanged at 2.20c, with the usual preferential figure of 2.10c applying where warranted.

Cleveland, Nov. 1.—Specifications against fourth quarter contracts for cold finished steel bars are coming in better than mills had expected. New buying is practically absent, sales that are being made consisting only of carload and less quantities. On contract business 2.25c, Cleveland, continues in force, and it is estimated that 80 per cent of current sales are at that level. Several small mills, pressed for business, have broken the market to 2.15c, one lot being placed at that level in the past week.

Strip Steel

Some Betterment in Demand Is Met and Prices Are Steady

STRIP PRICES, PAGE 1108

Pittsburgh, Nov. 1.—Hot and cold strip buying shows more expansion although this has not reached the proportions expected. Additional automotive buying has increased the aggregate, although some purchases developed price concessions of $1 or $2 per ton. Makers here continue to name 3.00c on cold strips, 3 tons or more of a size; 2.10c on hot strips 6 inches or wider; and 2.30c on material narrower than 6 inches. Strip mill operations continue between 50 and 60 per cent.

Chicago, Nov. 1.—Demand for hot rolled strip steel is spotty and individual specifications recently have been smaller. Deliveries to automotive parts makers are fairly active. Quotations are settled at 2.40c, Chicago, for all gages narrower than 6 inches and at 2.20c to 2.40c for wider material. Some sellers have adopted quantity differentials based on annual consumption of consumers.

Youngstown, O., Nov. 1.—Somewhat better volume of new business in both hot-rolled and cold-rolled strip has been taken by valley mills. Two large lots from important Michigan consumers have come to cold-rolled makers whose delivery will be extended throughout the remainder of this year. Recent extreme price cutting in cold-rolled in Detroit competition has not resulted in important changes in sources of supply, and the discouraged price trimmers appear to have subsided for the time being. Hot-rolled strip is 2.05 to 2.15c, Pittsburgh, and cold-rolled 2.90 to 3.15c, depending upon the tonnage.

Cleveland, Nov. 1.—Strip prices are weakening. Prices are steady at 2.30c Pittsburgh, on less than 6-inch widths but on sizes over 12-inch, where the 2.10c quotation does not apply, competition from large mills in increasingly sharp.

Nonferrous Metals

Prices Little Changed Throughout List Despite Light Demand—Copper and Lead Appear Firmer While Zinc and Tin Are Easy

Prices of the Week, Cents a Pound

	Copper			Straits Tin							
	Electro delivered	Lake delivered	Casting refinery	New York Spot	December	New York Lead	St. Louis Lead East	St. Louis Zinc	Aluminum 98-99%	Antimony Spot	Nickel Ingot
Oct. 26	13.22½	13.37½	13.00	58.62½	58.50	6.25	6.00	5.90	24.80	10.87½	35.00
Oct. 27	13.25	13.30	13.00	58.10	57.70	6.25	6.00	5.87½	24.80	10.87½	35.00
Oct. 28	13.25	13.30	13.00	57.75	57.50	6.25	6.00	5.87½	24.80	10.87½	35.00
Oct. 31	13.25	13.30	13.00	57.50	57.37½	6.25	6.00	5.82½	24.80	11.00	35.00
Nov. 1	13.25	13.37½	13.00	57.37½	57.25	6.25	6.00	5.80	24.80	11.00	35.00

NEW YORK, Nov. 1.—Buying of nonferrous metals has been light during the past week but most prices changed little. There have been two distinct tendencies, one toward firmness in copper and lead, and the other toward easiness in zinc and tin.

Mill products have held unchanged, with those containing copper still on the basis of 13.25c, delivered, for the red metal. Moderate business for early shipment is going in products.

Copper—The tendency to shade prices disappeared about a week ago and nearly all sellers have been firm at 13.25c, Connecticut, the past few days, and mostly at 13.37½c or higher, delivered Midwest. Domestic buying has been light but export demand has continued large, so that October is reported to have been one of the best months on record. Export sales of the month were mostly for shipment in October or November. The export price is unchanged at 13.60c c.i.f. European port.

Zinc—Prime western has slipped off another 10 points this week with some metal available as low as 5.80c, East St. Louis. Some business was done at 6.00c but not a great deal at lower prices. The ore market continues weak, slipping to $37 a ton. Midmonth statistics did not look encouraging from a selling point of view, though not showing any great change. The market is the lowest since the middle of 1924. High grade metal was cut ¼-cent to 7.75c delivered for one brand, while another, of which little is offered in the current market, holds unchanged.

Tin—The market has sagged gradually about one cent in the past week. Business was active some days but as a whole users did not buy much. Prices again are down to the level of the end of September, the lowest since the autumn of 1925. Such buying as users have done has been well scattered over the next few months. A short while ago it was thought that October statistics would turn out very strong, but in the past few days the trade has been changing its ideas. Stocks in this country in October jumped to an unusually high point at 3158 tons. However, much of this metal was sold but arrived too late for October delivery. Domestic deliveries last month were 6005 tons, slightly under the monthly average but of good size for the season. Fundamentally there is no change from liberal supplies and restricted use.

Lead—The market is slightly firmer with London influence on the side of strength this past week. Buying picked up in the past day or two but was light earlier in the week. There was a tendency toward a slight premium on immediate shipment metal at St. Louis.

Aluminum—The open market is nominally about the same, as the prices of the domestic producer, 24.80c on 98-99 per cent and 25.00c on 99 per cent. Demand is light.

Mill Products

Base prices cents per pound, f.o.b. mill

SHEETS	
Yellow brass (high)	18.25
Copper, hot rolled	22.00
Lead full sheets (cut ¼c more)	9.75
Zinc (100-pound base)	10.00
Aluminum, flat sheets, up to 10 gage, 3" to 72" wide	32.00
SEAMLESS TUBES	
Yellow brass (high)	23.12½
Copper	24.00
RODS	
Yellow brass (high, free turning)	16.00
Naval brass	18.75
WIRE	
Copper, small lots	15.00
Yellow brass (high)	18.75

Old Metals

Dealers' buying prices, cents per pound

HEAVY RED BRASS	
New York	8.75 to 9.00
Chicago	9.25 to 9.50
Cleveland	9.25 to 9.50
HEAVY YELLOW BRASS	
Chicago	6.75 to 7.00
Cleveland	7.00
ZINC	
New York	3.75 to 4.00
Cleveland	3.50
HEAVY COPPER AND WIRE	
New York	10.25 to 10.50
Boston	10.50 to 10.75
Chicago	10.00 to 10.50
Cleveland	10.75 to 11.00
RED BRASS BORINGS	
New York	8.00 to 8.25
YELLOW BRASS TUBING	
Cleveland	7.50 to 7.75
LIGHT COPPER	
New York	9.00 to 9.25
Chicago	9.25
Cleveland	9.50 to 9.75
LIGHT BRASS	
Boston	5.25 to 5.50
Chicago	6.25
Cleveland	5.25 to 5.50
ALUMINUM	
Clippings, Cleveland	18.50
Borings, Cleveland	9.50
Cast, Cleveland	13.50
Cast, Boston	13.00 to 13.50

Secondary Metals

Remelt aluminum No. 12	18.50
Brass ingot, 85-5-5-5	12.00

Coke By-Products

Foreign Business in Sulphate Is Dwindling—Prices Steady

New York, Nov. 1.—Steadiness prevails in sulphate of ammonia, prices holding at the recently advanced range of $2.30 to $2.35, delivered, for domestic account, and $2.30 to $2.35, port, for export account. These latter prices are largely nominal since American sellers are losing most foreign business. Germany is said to be the principal seller in the export field, with England second. Spot domestic demand is being maintained at the slightly better rate of the past couple of weeks.

Light oil distillate prices continue steady. Toluol continues in outstanding demand, with paint and lacquer manufacturers closing on substantial quantities. Benzols also are moving at the improved rate of the past two or three weeks. Naphthalene is undergoing seasonal dullness.

Coke Oven By-Products

Per Gallon at Producers' Plants in Tank Lots

	Spot	Contracts
Pure benzol	$0.23	
90 per cent benzol	0.23	
Toluol	0.35	
Solvent naphtha	0.35	
Commercial xylol	0.36	
Phenol	0.19 to 0.20	

Per Pound at Producers' Plants

Naphthalene flakes	0.05½ to 0.06½
Naphthalene balls	0.06½ to 0.07½

Per 100 Pounds Delivered

Sulphate of ammonia	$2.30 to $2.35

Mercury Is $127 to $129

New York, Nov. 1.—Quicksilver is strong but not much changed at $127 to $129 a flask.

Warehouse

Revision of Cold Finished Steel Prices and Adoption of Extras Becoming Common—Demand Shows Little Change

MORE warehouse centers are adopting the revision of cold finished steel bar prices with quantity extras. Other quotations generally remained unchanged during the week except for further recession in Philadelphia prices. Demand during October generally was but little different than that of September.

One of the leading Cleveland jobbers reports October sales about 5 per cent above those of September. Other large distributors claim sales just about equal to or a little behind September and below October 1926. Unseasonally good weather has aided building materials demand. No alteration of the present system of quoting cold finished steel bars is anticipated by local sellers despite the growing tendency to adopt quantity differentials in other cities. Galvanized sheet prices have been dropped $3 a ton to 4.50c.

Jobbers in the New York metropolitan district have revised their base prices on cold finished steel, now quoting 3.30c on cold rolled rounds and hexagons and 3.80c on flats and squares. This is a sharp reduction which is offset in part by newly established quantity extras which are as follows: 2.00c extra on lots under 100 pounds; 1.50c on lots of 100 to 299 pounds; 1.00c on 200 to 499 pounds; 0.75c on 500 to 999 pounds; 0.40c on 1000 to 1999 pounds; and 0.20c on 2000 to 5999 pounds. The latter three extras conform with the newly-established mill extras. In addition, New York jobbers have established a 25.00c minimum charge on a single item, a 50.00c minimum charge on a single order and a 25.00c minimum cutting charge. A slightly upward tendency is noted in sheets. Demand generally is well maintained.

The warehouse markets at Detroit are quiet. Individual orders are small, although the number of such orders being received is satisfactory. Current demand is well diversified and some improvement is looked for during the current month. October showed a slight improvement over the preceding month.

Cincinnati jobbers had only a fair amount of business in October, the usual upward seasonal trend having failed to materialize. Sales were moderately well distributed among all products. Prices are unchanged.

October demand for warehouse steel in the Chicago district approximated that for September. Prices are steady with the exception of the adoption of the new extras on cold finished bars. Demand has shown slight increase the past week. Sheet jobbing is fairly active.

Philadelphia jobbers report business slightly increased in the past week, but the volume still is disappointing. Shape and bar prices, which were reported somewhat demoralized last week generally are not selling below 2.50c, base delivered locally. Attractive tonnages in a number of cases have brought less but 2.50c seems to be the lowest general figure.

Warehouse Quotations in Cents Per Pound at Leading Market Centers

STEEL BARS

Baltimore	2.60c to 3.31c
Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Cleveland	3.00c
Detroit	3.00c
Ft. Worth	3.75c
Los Angeles	3.40c
New York	3.24c
Philadelphia	2.50c to 3.20c
Pittsburgh	2.85c to 2.90c
Portland	3.00c
San Francisco	3.15c
Seattle	3.00c
St. Louis	3.15c
St. Paul	3.25c
Tulsa	3.75c to 4.06c

IRON BARS

Baltimore	2.60c to 3.31c
Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Detroit	3.00c
Ft. Worth	3.75c
New York	3.24c
Philadelphia	2.50c to 3.20c
St. Louis	3.15c
Tulsa	3.75c to 4.06c

REINFORCING BARS

Baltimore	2.80c to 3.31c
Boston	3.265c to 3.50c
Buffalo	2.75c
Cincinnati	3.00c
Cleveland	2.20c
Detroit	3.00c
Ft. Worth	3.75c
*Los Angeles	3.05c
**Los Angeles	3.30c
New York	2.95c
Philadelphia	2.50c to 3.20c
Pittsburgh	2.50c to 2.75c
*San Francisco	2.85c
**San Francisco	3.10c
Seattle	3.00c
St. Louis	3.15c
Tulsa	3.75c to 4.00c
Youngstown	2.30c

*Carload. **Less carload.

STRUCTURAL SHAPES

Baltimore	2.60c to 3.41c
Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland	3.00c
Detroit	3.10c
Ft. Worth	4.25c
Los Angeles	3.40c
New York	3.34c
Philadelphia	2.50c to 3.20c
Pittsburgh	3.00c
Portland	3.00c
San Francisco	3.15c
Seattle	3.00c
St. Louis	3.25c
St. Paul	3.35c
Tulsa	3.75c to 4.16c

PLATES

Baltimore	2.60c to 3.41c
Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland, ¼-in and thicker	3.00c
Cleve., 3/16-in.	3.20c
Detroit	3.10c
Detroit, 3/16-in.	3.30c
Ft. Worth	4.50c
Los Angeles	3.40c
New York (sheared and universal)	3.34c
New York (floor)	5.25c
Philadelphia	2.50c to 3.20c
Phila., 3/16-in.	2.70c to 3.40c
Pittsburgh	3.00c
Portland	3.00c
San Francisco	3.15c
Seattle	3.00c
St. Louis	3.25c
St. Paul	3.35c
Tulsa	3.75c to 4.16c

No. 10 BLUE ANNEALED SHEETS

Baltimore	3.20c to 3.66c
Boston, 3/16-in.	3.915c
Buffalo	3.80c
Chicago	3.50c
Cincinnati	3.60c
Cleveland	3.25c
Detroit	3.50c
Ft. Worth	4.70c
Los Angeles	3.85c
New York	3.50c to 3.60c
Portland	4.00c
Philadelphia	3.00c to 3.20c
Pittsburgh	3.20c
San Francisco	3.75c
Seattle	4.00c
St. Louis	3.60c
St. Paul	3.75c
Tulsa	4.20c to 4.56c

No. 24 BLACK SHEETS

Baltimore	3.60c to 4.30c
Boston	5.00c
Buffalo	4.30c
Chicago	3.95c
Cincinnati	4.05c
Cleveland	3.75c
Detroit	4.10c
Ft. Worth	4.70c
Los Angeles	5.10c
New York	3.90c to 4.00c
Philadelphia	4.10c to 4.25c
Pittsburgh	3.65c
Portland	4.90c
San Francisco	4.80c
Seattle	5.00c
St. Louis	4.45c
St. Paul	3.95c
Tulsa	4.75c

No. 24 GALVANIZED SHEETS

Baltimore	4.30c to 5.45c
Boston	5.85c
Buffalo	5.15c
Chicago	4.80c
Cincinnati	4.90c
Cleveland	4.50c
Detroit	4.90c
Ft. Worth	5.75c
Los Angeles	5.30c
New York	4.60c to 4.70c
Philadelphia	5.00c to 5.10c
Pittsburgh	4.50c
Portland	5.65c
San Francisco	5.35c
Seattle	5.75c
St. Louis	5.25c
St. Paul	4.90c
Tulsa	5.55c

BANDS

Baltimore	3.40c to 4.06c
Boston	4.015c
Buffalo	4.05c
Chicago	3.65c
Cincinnati	3.95c
Cleveland	3.65c
Detroit	3.65c
Ft. Worth	4.40c
Los Angeles	4.25c
New York	3.99c
Philadelphia	3.40c to 3.90c
Pittsburgh	3.60c
Portland	4.00c
San Francisco	4.00c
Seattle	4.00c
St. Paul	3.90c
Tulsa	4.71c

HOOPS

Baltimore	4.16c
Boston	5.50c
Buffalo	4.05c
Chicago	4.15c
Cincinnati	4.40c
Cleveland	3.65c
Detroit	4.15c
New York	4.49c
Philadelphia	3.65c to 4.25c
Pittsburgh	4.25c to 4.50c
Seattle	5.00c
St. Paul	4.40c

COLD FINISHED STEEL

	Rounds, hexagons	Flats squares
Baltimore	4.00c	4.50c
Boston	4.05c	4.55c
Buffalo	3.95c	4.45c
Chicago	3.60c	4.10c
Cincinnati	3.85c	4.35c
Cleveland	3.65c	4.15c
Detroit	3.85c	4.35c
Los Angeles	5.25c*	.....
New York	3.30c†	3.80c†
Philadelphia	3.25c†	3.75c†
Pittsburgh	3.60c	4.10c
Portland	5.00c*	.....
San Francisco	4.25c*	.....
Seattle	5.00c*	.....
St. Paul	3.85c	.....
Tulsa	4.66c	5.16c

*Rounds only.
†Plus quantity extras.

COLD ROLLED STRIP

Boston, 0.100-inch, 500-lb. lots	6.00c
Buffalo	5.85c
Chicago*	6.10c
Cincinnati	7.15c
Cleveland*	5.95c
Detroit*	6.05c
New York	5.75c to 6.25c
Philadelphia	5.50c

*Net base, straightening, cutting, boxing one ton or more.

SWEDISH IRON AND STEEL

New York duty paid

Hollow drill steel	14.00c
Iron bars, rounds	6.25c

Flats and Squares

Baltimore, New York, Phila.	6.60c

Coast Buying Is Steady

Steel Buying Exceeds Sales of Same Period Last Year—Prices Holding Unchanged

SAN FRANCISCO, Oct. 29.—(*By Air Mail*)—Trading can be considered only fair. Several fair sized awards of cast iron pipe and structurals were booked. General demand has shown no improvement and in several commodities, such as sheets and tubular goods, extreme quiet prevails. Building permits for October will show a decided increase over September and also over the same period in 1926. This is not yet reflected in increased demand for structural materials. Prices appear to be holding rather well to the levels established over a month ago.

Pig Iron and Coke

Although foundry pig iron prices continue unchanged from last week foundry coke has been advanced 50 cents a ton. English beehive material now ranges from $15 to $16.50 a ton f.o.b. dock and English by-product coke is $12.50 to $13.50 a ton. Sales and inquiries for iron and coke have involved relatively small lots. Foundry operations among jobbing plants show little improvement, but manufacturers of sanitary ware and stoves report a good volume of business.

Coast Pig Iron Prices

Utah basic	$25.00 to 26.00
Utah foundry	25.00 to 26.00
*German	24.25
*Indian	25.00
*Dutch	24.50

*C.i.f. duty paid.

Bars, Plates and Shapes

Awards of concrete bars aggregate 842 tons, bringing the total for the year to 49,470 tons, compared with 34,668 tons for the corresponding period last year. Included among the awards were 220 tons for a hotel at Merced, Calif., and 200 tons for a pier shed in Oakland, Calif. Bids will be opened next week on 600 tons for the Big Dalton dam, Los Angeles, and on 100 tons for the Butler building, San Francisco. Most awards continue to call for 10 to 40 tons. Several projects for the state highway commission were opened this week but no award has been made. Over 400 tons are involved.

Rivet prices are firm at 2.75c, base, Pittsburgh, or equivalent but bookings recently have seldom exceeded carload lots.

The Western Pipe & Steel Co. booked 400 tons of plates for a pipeline for the United States Stores, Seattle, for shipment to Alaska. Blue annealed sheets will be used in fabricating this 4 to 18-inch line. The other project was booked by the Steel Tank & Pipe Co. and called for 100 tons of plates for a pontoon pipeline for the port commission at Oakland. The only pending business is a lot of less than 100 tons for the Southern Pacific Co. at San Francisco. Several pipe-line projects in the northwest will shortly come up for figures. Awards so far this year total 62,209 tons, compared with 67,105 tons for the same period in 1926. Prices continue fairly firm at 2.40c c.i.f. Coast ports, an occasionally lower price applying on large and desirable tonnages.

Structural shape lettings this week involved two projects in excess of 100 tons. Dyer Bros. took 100 tons for a warehouse in San Francisco and the Atlantic, Gulf & Pacific Co. secured 1200 tons for twelve bridge spans for the Manila railway in the Philippine islands. Awards to date this year aggregate 122,527 tons, compared with 101,826 tons for the corresponding period last year. Pending business exceeds 6000 tons, new inquiries involving 520 tons for berths at Los Angeles and a large tonnage for a hotel in San Francisco. While plain material from domestic mills continue firm at 2.40c c.i.f., fabricated and erected prices, both here and in Los Angeles have been low. Several large projects in the southern part of the state have recently gone at less than $80 a ton erected. This does not hold true in every instance, one eastern interest recently taking a 1200-ton office building at Pasadena on a basis of $96 a ton, erected.

Other Finished Material

Cast iron pipe mill representatives have their interest centered in the inquiry of Los Angeles calling for 4163 tons, bids on which will be opened next week. This is the second largest inquiry of the year, the same city being in the market last March for 6200 tons. Awards of the week totaled 1361 tons, bringing the aggregate for the year to 67,193 tons, compared with 62,085 tons for the same period in 1926. San Bernardino, Calif., placed the largest order of the week, splitting the tonnage, amounting to 515 tons, between American Cast Iron Pipe Co. and Pacific States Cast Iron Pipe Co. Other awards included 383 tons for Burlington, Ore., and 193 tons and 183 tons, respectively, for San Diego and Santa Monica, Calif. Pending business is over 4700 tons, Santa Barbara, Calif., and Phoenix, Ariz., being in the market for 182 and 142 tons, respectively.

Sterling Metal Novelty Mfg. Co., 505 Court street, Brooklyn, N. Y., has been placed in bankruptcy with William Lieberman as receiver. The company showed liabilities of $42,001.21 and assets of $4,038.56.

Puddlers' Rate Reduced for Next Two Months

Pittsburgh, Nov. 1.—A reduction of 25 cents a ton will be made in the wage rate of puddlers working in bar iron mills having contracts with the Amalgamated Association of Iron, Steel and Tin Workers. The new wage rate for November and December will be $11.30, compared with $11.55 in September and October. At a meeting of representatives of the mills and Amalgamated association here last week the average sales price of bar iron in September and October was found to be 1.90c per pound, against 1.95c which prevailed since Jan. 1.

Wages of the roll hands will be reduced 2.5 per cent.

The new contract between mills and Amalgamated association provided for an advance in the puddlers' base rate, beginning July 1. The rate paid to puddlers since July 1, on a 1.95c card, has been $11.55. The new contract did not alter the base rates for all other departments. Following is a comparison of reported sales price averages:

	1927	1926	1925	1924	1923
Jan. Feb.	1.95c	2.00c	2.00c	2.35c	2.25c
Mar.-Apr.	1.95c	2.05c	2.35c	2.35c	1.50c
May-June	1.95c	2.00c	2.05c	2.25c	2.50c
July-Aug.	1.95c	2.00c	1.95c	2.15c	2.50c
Sept.-Oct.	1.90c	2.00c	1.95c	2.10c	3.40c
Nov.-Dec.	.....	2.00c	1.95c	2.05c	2.35c
Yearly av.	.....	2.00c	1.99c	2.21c	2.30c

Sheet and Tin Mill Wage Rates Advanced

Youngstown, O., Nov. 1.—Amalgamated sheet and tin plate mill wage rates for November and December will be higher than in the past two months. The average of sales prices of sheets on which the wages are based was 3.10c in September and October, compared with 3.00c in the preceding period. Sheet and tin plate mill wages accordingly will advance from 25½ per cent above base to 28½ per cent above base. Following is a comparison of reported price averages for the periods designated:

Sept-Oct.	3.10c	+3 per cent
July-Aug.	3.00c	unchanged
May-June	3.00c	unchanged
March-April, 1927	3.00c	—3 per cent
Jan.-Feb.	3.10c	—4½ per cent
Nov.-Dec.	3.25c	unchanged
Sept.-Oct.	3.25c	unchanged
July-Aug.	3.25c	unchanged
May-June	3.25c	unchanged
March-April	3.25c	+1½ per cent
Jan.-Feb., 1926	3.20c	+3 per cent
Nov.-Dec.	3.10c	unchanged
Sept.-Oct.	3.10c	—4½ per cent
July-Aug.	3.25c	—4½ per cent
May-June	3.40c	unchanged
March-April	3.40c	—1½ per cent
Jan.-Feb., 1925	3.45c	—1½ per cent

September Plate Sales Decline Slightly

Washington, Nov. 1.—Fabricated steel plate bookings totaled 38,662 tons in September, compared with 48,577 tons in August. The September total is second highest since April, according to department of commerce statistics, based on reports of 51 manufacturers. Further comparisons follow:

Total	*Total	Oil storage tanks	Gas holders	Blast furnaces	Stacks and miscellaneous
1923	581,873	303,416	53,415	9,815	161,513
1924	348,332	124,959	50,641	12,601	130,822
1925	385,524	99,134	42,273	12,651	165,289
1926					
Sept.	38,789	17,038	1,491	861	13,023
Total					
(9 mos.)	375,962	116,528	39,802	11,203	158,500
Oct.	44,974	23,094	1,333	994	14,316
Nov.	63,119	26,269	4,531	418	11,406
Dec.	29,858	9,476	1,858	1,791	12,627
Total					
(year)	513,913	175,367	47,524	14,406	196,849
1927					
Jan.	35,854	14,342	1,994	568	9,839
Feb.	59,643	32,983	3,334	606	16,647
March.....	55,407	24,127	5,135	857	17,900
April	47,347	18,019	9,450	420	15,069
May	37,883	10,855	2,524	364	20,865
June	28,811	7,402	2,263	1,026	15,192
July	*35,326	17,199	1,034	537	*14,274
Aug.	*48,577	*29,691	3,504	481	11,385
Sept.	38,662	15,421	2,254	873	14,576
Total					
(9 mos.)	387,510	170,039	31,492	5,732	135,837

*Revised.

Export Rates on Iron and Steel Cut

Philadelphia, Nov. 1.—Principal trunk lines have reduced export rates on iron and steel from 75 per cent of domestic rates to 60 per cent. They will file tariffs on this basis in November to become effective Dec. 31. New export rates from Pittsburgh will be 20½ cents per 100 pounds to New York, 18½ cents to Philadelphia and 17½ cents to Baltimore. These rates will apply to minimum carloads of 45,000 pounds, whereas regular domestic rates apply to minimum car loads of 36,000 pounds. This revision is surprising in view of the interstate commerce commission's general rate investigation.

Wheeling Earnings Gain

Net earnings of the Wheeling Steel Corp. and subsidiary companies for the third quarter were $899,959. This was the largest profit shown for any quarter this year. It compared with $855,036 for the second quarter and $894,752 for the first quarter. For the first nine months the company shows a net income, before dividends, of $2,748,146 against $3,582,684 for the corresponding period of 1926.

Inland Profits Drop

Net profits of the Inland Steel Co. for the third quarter of 1927 amounted to $1,244,021 compared with $1,701,286 for the corresponding period of 1926. During the first nine months the company earned $5,590,041 against $5,034,519 during the corresponding months of 1926.

Superior Reports Loss

The Superior Steel Corp. reports a net loss of $32,608 for the September quarter against a net income of $52,970 in the third quarter of 1926. Nine months earnings were $116,623 against $276,365 in the corresponding period of 1926.

Gulf States Net Higher

The Gulf States Steel Co. reports a net income of $150,182 after taxes, depreciation and other charges, in the third quarter. This compares with $134,130 earned in the preceding quarter and with $148,288 in the corresponding quarter of 1926. Net income for the nine months was $521,408 against $564,940 in the corresponding period of 1926.

Bethlehem Net Lower

Net income of the Bethlehem Steel Corp. for the quarter ended Sept. 30 amounted to $2,788,053. This compared with $4,550,978 reported for the corresponding period of 1926. Bethlehem shows a net income for the first nine months of the year of $13,454,771 against $15,764,851 for the first three quarters of 1926, a decrease of 15 per cent.

Sheet & Tube Net Falls

During the third quarter of 1927 the Youngstown Sheet & Tube Co. earned a profit, after charges, of $1,538,812 against $4,007,459 for the corresponding quarter of 1926. Nine months earnings of the company amounted to $5,857,070, compared with $11,994,128 in the first three months of 1926.

Republic Profits Down

The Republic Iron & Steel Co. reports net profits, after charges, of $501,992 for the third quarter of 1927. This compares with $988,115 for the third quarter of 1926. Nine months earnings amounted to $2,534,529 against $3,755,548 in the first three quarters of 1926.

The third annual conference of the New England council will be held at Springfield, Mass., Nov. 17-18, to discuss problems pertaining to the commercial, industrial and agricultural interests of the New England district.

Belgium Ships in Plates

Philadelphia, Nov. 1.—Steel imports at Philadelphia in the week ending Oct. 29 included 642 tons of structupral shapes from Belgium, 93 tons of steel bars from Belgium and 47 tons of steel bars from France. Manganese ore to the amount of 1500 tons was received from British India and 49 tons of iron ore came in from Germany.

Reaffirm Simplification

Five of the major industries, through their respective standing committees, have held revision conferences in the past month and reaffirm their respective simplified practice recommendations for another year, according to the division of simplified practice, department of commerce. These recommendations pertain to files and rasps, sheet steel, eaves trough and Conductor pipe, terne plate, and tinware, galvanized and japanned ware.

Pig Iron Demand Is Dull

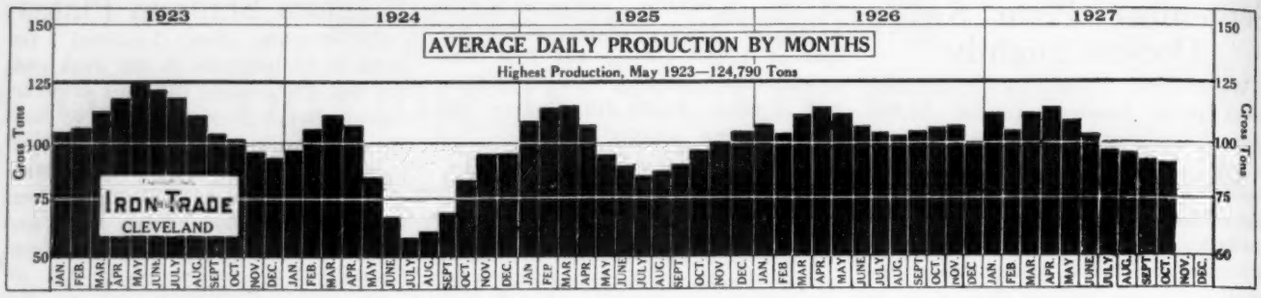
(*Concluded from Page* 1109)

Ohio River. Producers in northern Ohio still are selling foundry iron at $16.50 to $17, base, Cleveland. There have been only a few sales the past week, and none for more than 100 tons. Anderson Stove Co., Anderson, Ind., is expected to buy 500 tons of foundry iron from a lake furnace. Sellers at Ironton, O., continue to quote $19, base, furnace, but cannot take any sizable orders at that price.

St. Louis, Nov. 1.—A slight increase in interest in pig iron requirements is indicated, but sales still are limited to small lots. About 5000 tons was booked in this district in the past week, for delivery in this quarter. The leading local producer reports sales aggregating 4800 tons, the largest lots being two of 500 tons each. Melters continue to complain of a dearth of new orders, except several specialty manufacturers. The drop of $1.25 in the price of Alabama iron brings the delivered price here to $20.42. The St. Louis Gas & Coke Corp. continues to quote $19.50 to $20, f.o.b. Granite City.

Birmingham, Ala., Nov. 1.—A reduction of $1.25 in pig iron prices, from $17.25 to $16, base, Birmingham, is expected to stimulate buying. Announcement was made late last week, and those consumers who were holding off got in for only a little tonnage. Surplus stock of iron in furnace yards is 20 per cent greater now than at the beginning of the year. The reduction of $1.25 will enable southern iron to get into Ohio river markets, almost on a parity with northern iron.

Philadelphia, Nov. 1.—The United States Cast Iron Pipe & Foundry Co., is reported to have bought 25,000 tons at $16, base, Birmingham. In this territory only miscellaneous buying has been done. J. L. Mott Co., Trenton, N. J., and the Pusey & Jones Co., Wilmington, Del., each has bought several hundred tons of malleable.



Iron Production in Further Decline

FOR another month production of coke pig iron has continued on the descent and marks the sixth consecutive month of curtailment. As the production rate shrank in October, so did the number of active furnaces, bringing tht total on Oct. 31 down to 175 and the fewest number producing iron since September, 1924.

Active Blast Furnaces

	In blast	Total	Per Cent
October	175	361	48.4
September	181	362	50.0
August	189	362	52.2
July	190	362	52.5
June	198	362	54.7
May	211	363	58.1
April	221	364	60.7

MONTHLY PRODUCTION

	1927	1926	1925
January	3,101,346	3,319,789	3,372,207
February	2,940,604	2,923,850	3,214,067
March	3,482,107	3,458,171	3,571,422
April	3,424,377	3,438,805	3,211,235
May	3,391,067	3,477,820	2,933,907
June	3,089,726	3,232,478	2,679,045
July	2,954,625	3,224,663	2,665,262
August	2,950,674	3,200,723	2,707,171
September	2,782,500	3,163,269	2,725,885
October	2,810,231	3,334,206	3,017,889
Total 10 mos...	30,927,257	32,773,774	30,098,090
November		3,237,992	3,023,257
December		3,089,175	3,249,057
Grand total		39,100,941	36,370,404

Production in October amounted to 2,810,231 gross tons, which compared with the 2,782,500 tons of the preceding month, was an improvement of 27,731 tons. However, October had 31 days, against 30 in September. Average daily producton was 90,652 tons, or a drop of 2098 tons per day from the 92,750-ton per day rate of the month before. This output was the lowest for any month since August, 1925, when the daily rate was 87,328 tons. In the corresponding month one year ago, operations were at the rate of 107,555 tons a day and on the ascendency.

AVERAGE DAILY PRODUCTION

	1927	1926	1925	1924	1923
Jan.	100,043	107,039	108,781	97,273	104,136
Feb.	105,021	104,423	114,788	105,987	106,925
Mar.	112,326	111,554	115,207	111,787	113,664
Apr.	114,146	114,627	107,041	107,537	118,210
May	109,388	112,187	94,642	84,515	124,790
June	102,991	107,749	89,301	67,427	122,262
July	95,311	104,021	85,976	57,531	118,860
Aug.	95,183	103,249	87,328	60,741	111,254
Sept.	92,750	105,442	90,862	68,454	103,917
Oct.	90,652	107,555	97,351	79,419	101,375
Nov.		107,933	100,775	83,832	96,373
Dec.		99,651	104,808	95,367	93,952
Ave.	101,734	107,126	99,645	84,908	109,659

On the last day of the month, 175 of the country's 361 serviceable blast furnaces were making iron. This represented an activity of 48.4 per cent. On Sept. 30, active stacks totaled 181 out of 362, or 50 per cent. During the month 2 merchant were blown in and 1 blown out or banked. Of the nonmerchant or steelworks class, 2 were blown in and 9 blown out.

With the dismantling of the Genesee blast furnace of the Corrigan-McKinney Steel Co. at Charlotte, N. Y., the number of serviceable stacks in the country has been reduced from 362 to 361.

Stacks blown in during October were: In Ohio: Belfont, Belfont Steel & Wire Co. In Pennsylvania: Cambria H, Bethlehem Steel Co.; Edgar Thomson H, Carnegie Steel Co. In Detroit A, M. A. Hanna Co.

Stacks blown out during the month were: In Ohio: Youngstown C, Youngstown Sheet & Tube Co. In Pennsylvania: Cambria F, Bethlehem Steel Co.; Donora No. 1, American Steel & Wire Co.; Edgar Thomson I, Carnegie Steel Co.; one Monessen, Pittsburgh Crucible Steel Co.; Hokendauqua, Thomas Iron Co. In Alabama: Bessemer No. 2, Tennessee Coal, Iron & Railroad Co. In Colorado: One Minnequa, Colorado Fuel & Iron Co. In Illinois: South Works E, Illinois Steel Co. In Indiana: Gary No. 11, Illinois Steel Co.

DIVISIONS OF PRODUCTION

1926	Merchant	Non-merchant	Spiegel	Ferro-manganese	Other ferro
Jan.	724,946	2,594,843	7,746	32,924	1,607
Feb.	622,121	2,301,729	7,084	22,309	1,464
Mar.	733,321	2,724,850	7,339	24,604	1,942
April	779,310	2,659,495	7,051	24,134	1,593
May	797,539	2,680,281	6,990	22,979	1,704
June	734,823	2,497,655	5,864	25,378	.....
July	758,166	2,466,497	3,699	26,873	.....
Aug.	682,017	2,518,706	4,372	23,557	.....
Sept.	684,420	2,478,849	2,925	25,218	.....
Oct.	712,872	2,621,334	6,295	28,444	516
Nov.	710,362	2,527,630	7,656	31,903	.....
Dec.	743,612	2,345,563	7,140	31,727	.....
Tot.	8,683,509	30,417,432	74,070	319,510	8,826
1927					
Jan.	745,766	2,355,580	7,486	32,844	.....
Feb.	642,804	2,297,800	7,045	24,560	.....
Mar.	762,354	2,719,753	7,650	27,883	.....
April	735,385	2,688,992	12,871	24,786	.....
May	701,582	2,689,485	9,945	28,733	1,668
June	714,268	2,375,458	19,253	31,267	1,609
July	736,707	2,217,919	19,591	26,394	1,758
Aug.	667,104	2,283,570	14,659	21,279	1,525
Sept.	650,342	2,131,252	16,027	20,675	1,707
Oct.	692,817	2,117,414	16,929	17,710	1,294

OCTOBER PIG IRON

	No. of stacks	Number in blast last day of month Oct.	Sept.	Total tonnage made Merchant	Nonmerchant	—Totals— Oct.	Sept.
Ohio	70	38	38	139,529	535,069	674,598	656,113
Pennsylvania	122	55	58	137,542	742,081	879,623	888,915
Alabama	34	18	19	114,091	98,892	212,983	195,634
Virginia	15	1	1	7,352	.....	7,352	7,234
New York	25	16	16	91,575	125,126	216,701	208,489
New Jersey	3	0	....	.....	.....	.....	.....
Illinois	26	15	16	116,594	165,076	281,670	286,324
Colorado	5	2	3				
Indiana	18	11	12	23,371	324,062	347,433	347,530
Maryland	6	5	5				
Wisconsin	5	1	1				
Kentucky	5	1	1				
Massachusetts	1	1	1				
Tennessee	11	2	2	28,162	56,944	85,106	87,147
Utah	1	1	1				
West Virginia	5	2	2				
Michigan	4	4	3				
Minnesota	3	2	2	25,150	43,682	68,832	66,705
Missouri	1	0	....				
Texas	1	0	....				
Spiegel and ferro—all states..	....	....	....	9,451	26,482	35,933	38,409
Total	361	175	181	692,817	2,117,414	2,810,231	2,782,500

Press Campaign for Expansion of Structural Steel Market

Fifth Annual Convention of American Institute of Steel Construction Reveals Progress Made in Four-Year Program

Fabricators Assembled at Pinehurst Discuss Engineering Problems and Merchandising—Publish Fireproofing Specification

THAT the untiring campaign of the American Institute of Steel Construction to win general acceptance of the merits of fabricated steel is gaining ground was emphatically demonstrated at the fifth annual convention of that organization held last week at the Carolina hotel, Pinehurst, N. C. Recognition of the institute's work was manifest, not only in reports and addresses comprising the four-day program, but also in messages of congratulation received from scores of national figures in the field of business and government.

One of the most appreciative commentators was Secretary of Commerce Herbert Hoover, whose address was delivered through the novel medium of a new reproducing and amplifying device.

Additional evidence of the interest with which the institute's campaign is being received was provided by numerous messages read Thursday night at the annual banquet by Charles F. Abbott, executive director. He quoted from communications received from Charles M. Schwab, chairman, Bethlehem Steel Corp.; W. H. Adams, governor of Colorado; H. N. Spaulding, governor of New Hampshire; Alfred A. Smith, governor of New York; George H. Moses, president United States senate; the Mayors of numerous large cities, presidents of scores of national trade organizations, several well known manufacturers from abroad, and others.

Mr. Abbott declared that these voluntary expressions of commendation reflect the fact that structural steel is being placed before the public in a favorable light and that at last the seed of a national consciousness for "steel" is taking root.

The program included notable addresses on technical and merchandising problems of the industry. Among the subjects of unusual interest were salesmanship, economic height of buildings, steel frames for residences, fireproofing for structural steel, skyscrapers and traffic congestion, steel for bridges, reinforced concrete construction, pricing of structural steel and design of buildings to resist wind stresses.

Resolutions were passed advocating the one-price policy and urging the hot steel industry to confer with the department of commerce in an effort to reduce the number and variety of structural steel sections now being marketed.

Says Mill Competition Is Bar To Good Marketing

IN ADDRESSING the convention at the opening session Tuesday morning, W. M. Wood, Mississippi Valley Structural Steel Co., Decatur, Ill., president of the institute, reviewed the work of the organization in relation to the four-year program adopted at Pittsburgh. He showed that of the 10 items comprising that program five have been accomplished, namely, extension of membership to include practically every fabricator in the United States and Canada, general adoption of specification for structural steel, preparation of a code of business standards, preparation of a standard handbook and efficient functioning of a traffic committee. Mr. Wood declared that while progress has been made on structural steel research, advancement of selling methods, investigation of uniform cost accounting and other problems, there still remains much to be done.

Mr. Wood emphasized the problem of competition between the fabricators and the mill interests. He said in part:

"However, on the subject of mill relationships, it is not their failure to reasonably support our activities that causes the greatest concern. I refer to the prevailing system whereby the fabricator—the logical distributor of the product of the mills—is continually brought into competition with the fabricating units of the rolling mills themselves on an unfair basis. Sometimes this competition is with the mill interest directly and sometimes through a third party who quite frequently has limited financial responsibility. . . . I know of no other major industry where the source of supply undertakes to deliver the finished product to the ultimate consumer except on a basis fair to all parties concerned.

"Of course this unethical practice continues because of the keen competition between the mills themselves in their endeavor to find a market for their plain material. However, it should be manifest to the most casual observer that this system does not create additional markets; it on'y antagonizes the fabricators who are really doing constructive work in creating new markets.

"It seems to me that this condition in which the mills today find themselves has been brought about over a period of years by their failure to educate the public as to the advantages of steel. In the meantime, however, other industries have stepped forward and from the housetops have proclaimed the merits of their product and the public listened; has bought; and is still buying. As a result competitive materials are today being used in many instances where steel should be used and the mills find themselves in need of additional tonnage to operate profitably and seem to feel that the way to get this additional tonnage is to try to get it from their competitors—that is from another rolling mill.

"With this bitter fight for orders between the mills themselves, with their failure to properly recognize the interests of the fabricators, thereby creating a spirit which should not exist between producer and distributor, it is not surprising that the steel industry is not making satisfactory profits.

"In the opinion of many the cry-

RELAXING AFTER A BUSINESS SESSION
Left to right: O. Zielsdorf, C. Hennecke Co., Milwaukee; J. T. Whitehead, Whitehead & Kales Co., Detroit; V. E. Ellstrom, Bethlehem Steel Co., Bethlehem, Pa.; Milo A. Baker, Baker Iron Works, Los Angeles; (*putting*) D. T. Buffington, Illinois Steel Co., Chicago, W. Waite, Waite Stewart Co., Inc., New York; Rudolph Miller, consulting engineer, New York

ing need of the steel industry is progressive leadership. Co-operation and not competition is the life of trade. It was Charles Steinmetz who said: 'Co-operation is not a sentiment—it is an economic necessity.' "

The annual report of the treasurer, George E. J. Pistor, Hay Foundry & Iron Works, New York, showed that the institute is in sound financial condition. In his report as executive director, Charles F. Abbott outlined the year's achievement, emphasizing particularly the activities designed to bring the merits of structural steel before the public in a favorable light. He reported that the membership now comprises 213 fabricators whose production is more than 90 per cent of the total production of structural steel in the United States and Canada, excepting the output of plants controlled by mills.

Karl E. Vogel, vice president, Omaha Steel Works, Omaha, Neb., opened the afternoon session with an address on the proper merchandising of structural steel. He declared the sales department is organized not alone for selling the product but is expected to sell the product at a profit. He emphasized the fact this is a job for both the individual fabricator and the institute working together. He then declared that each fabricator requires the following facilities to operate a selling method: A capable sales manager, an alert sales force, an engineering department capable of co-operating with the sales department, an advertising budget and active membership in local, district and national fabricating organizations.

He recommended that during the next 12 months each fabricator pay attention to the proper organization of its selling force, that regular sales meetings be established, that the institute sales manual be continued and completed as new material is available and that the general advertising campaign of the institute be approved and the work continued.

Lee H. Miller, chief engineer of the institute, devoted a large part of his annual report to the work of developing a specification on the fireproofing of structural steel. He said that a committee consisting of Rudolph P. Miller, S. H. Ingberg, H. G. Balcom, F. E. Turneaure, Frank Burton and A. R. Ellis had developed a specification which has now been published. Mr. Miller declared that the new specification is an important step in removing the question of fire resistant construction from empirical consideration and placing it on a rational basis.

Mr. Miller discussed other engineering activities including specifications for railway and highway bridges, the study of the question of standard uniform practice in the use of light secondary floor members in building construction and the question of rivets in tension.

Various committee reports were presented, one of the most interesting of which was that on publicity and advertising by George E. J. Pistor. Mr. Pistor outlined the activities of the institute during the year in advertising and publicity.

Charles M. Fitts, New England Structural Co., Boston, presented the report of the committee on uniform system of cost accounting. He described the results of a questionnaire sent to various fabricators which indicated a considerable difference of opinion as to the merits of a standardized cost accounting system. The report of the technical research committee presented by Aubrey Weymouth showed that the institute is co-operating with the American Welding society in the investigation of the application of welding to structural steel. It was recommended that the institute continue to co-operate in this work.

Following the report of the publicity and advertising committee, H. E. Detwiler, Anthracite Bridge Co., Scranton, Pa., related his experience in speaking before various service organizations in eastern Pennsylvania. Mr. Detwiler declared that he had taken it upon himself to outline the merits of structural steel as a building material to the members of various Rotary, Kiwanis and similar organizations. He stated that he had made 21 addresses and that in a number of cases the interest aroused led to the actual sales of small amounts of structural steel.

Economists Deal Blow To Skyscraper Prejudice

TWO exceedingly significant addresses on the economic phases of skyscraper construction were presented. The first, by George Henry Payne, commissioner of taxes and assessments, New York city, dealt with the relationship of tall buildings to the problem of congestion.

He declared that in certain quarters a prejudice against skyscrapers always has existed. First it was charged they were unsightly, unsafe and in violation of tradition. Next they were attacked on the ground that they shut out light and air. Tall buildings having thrived in spite of this opposition, the cry now is that they are productive of congestion.

Commissioner Payne refuted this latest charge by showing that traffic congestion was a serious problem on Manhattan island as early as 1796, when oxcarts were clogging the streets approaching the market districts. In 1831, he declared, before the skyscraper was even thought of, congestion was far worse than it is

today in any part of New York. He also declared that 2000 years ago Rome had a traffic problem more formidable than that of New York today. Rome had its traffic police, one-way streets and "taxicab" stands 20 centuries ago. Likewise London, with no skyscrapers, faces a problem of congestion far more acute than that of New York.

Turning to the economic phase of the question, he stated the taxable real estate on the island of Manhattan is assessed at 8 billion dollars of which more than a billion represents skyscrapers and the land they occupy. "The skyscraper", he concluded, "is an economic necessity."

One of the outstanding addresses of the convention was that entitled, "Economic Height of Buildings," by W. C. Clark, economist, S. W. Straus & Co., New York. Mr. Clark described an investigation which he conducted in co-operation with a group of experts in the design, construction, operation and maintenance of New York office buildings.

For the purpose of this study a 200 x 402-foot block in the Grand Central district was selected. At $200 per square foot, its value exceeds $16,000,000. Competent architects designed buildings for this plot of 8, 15, 22, 30, 37, 50, 63 and 75 stories. Other experts took the plans and estimated the cost of materials, equipment, etc.; taxes, depreciation, cost of operation and maintenance; and probable income from rent.

Much to the surprise of the author, and apparently to many others, the results indicated that for this plot and under the conditions existing in that district of New York, the 75-story structure will provide the greatest ultimate return on the investment. While final tabulations of figures from the investigation are not completed, the following gives an idea of some of the findings:

No. of stories	Cost of steel*	Cost of elevators*	Per cent return on total investment
8	$0.769	$0.651	2.8
15	0.832	0.650	4.9
22	0.896	0.746	6.1
30	0.958	0.919	6.8
37	1.014	1.007	7.6
50	1.150	1.136	8.4
63	1.350	1.297	8.8
75	1.730	1.574	9.1

*Per square foot of net rentable area.

Mr. Clark stated that the investigation does not mean that tall buildings are best in all cases, but it does indicate that under certain conditions it is necessary to go up 50 to 75 stories in order to obtain the greatest return on the total investment. The final figures, with complete plans and specifications, will be printed and distributed when the work is finished.

SOME OF THE INSTITUTE OFFICIALS ON THE LINKS

Left to right: W. S. Hazelton, Associated Steel Fabricators of Detroit; George E. J. Pistor, Hay Foundry & Iron Works, New York, and Treasurer A. I. S. C.; Dr. Ralph Modjeski, bridge engineer, New York; Lee H. Miller, chief engineer, A. I. S. C.; Charles F. Abbott, executive director, A. I. S. C.; (*driving*) W. M. Wood, Mississippi Valley Structural Steel Co., Decatur, Ill. and president, A. I. S. C.

"Courage" is the answer of W. R. Basset, of Miller, Franklin, Basset & Co., New York, to the current question of profitless prosperity. In an address entitled, "Pricing Structural Steel," he analyzed the business situation existing in many industries, declaring that there is excess capacity and that many companies are taking orders at below cost in order to keep their plants operating. "It requires courage to face the present situation," he declared, "and that courage is best found in concerted action, such as may be exercised in a trade organization." Proper knowledge of costs, based on a uniform cost accounting system for each industry is a fundamental necessity, he asserted.

Discuss Engineering Problems of Structural Steel

PROBLEMS of design and construction were discussed in a number of important technical papers. One of the most timely of these was "Practical Tests of Windbracing" by Prof. Clyde T. Morris, Ohio State university, Columbus, O., who reviewed published reports on recent windstorms and tornadoes. He advocated the use of the Ross method of analyzing stresses in tall building frames due to wind as being more satisfactory than any of the approximate methods now in use. He recommended that the stiffening effect of walls, partitions and floors be neglected in calculating wind stresses. He also urged that the lateral deflection of buildings under wind action be included in new building code specifications.

Can Measure Wind Stresses

Professor Morris sees exceptional opportunities for studying the effect of wind in the American Iusurance Union building in Columbus, in which gage points established during construction now are available for measurement of stresses due to wind. Targets in the longest elevator shaft also provide a means of measuring the sway of the building during a storm.

In discussing "Greater Safety in Building Construction", Robert D. Kohn, architect, New York, declared that one of the big elements in the problem of safety is the demand for "cheap" construction. "Price seems to be everything; quality is hardly considered," he said.

Mr. Kohn believes the solution lies in making owners realize they are to be held by law responsible for the safety of the buildings which they have built.

That fabricators are interested in additional outlets for structural steel

was proved by the attention given the address by Robert Tappan, architect and engineer, Forest Hills, N. Y., on "Steel in Residences." Mr. Tappan outlined his plan whereby the design of structural steel frames for small houses has been standardized. This frame is rectangular in shape and available in three sizes, but by adding a small wing in masonry or other material, an unlimited number of variations in architecture can be obtained. Mr. Tappan exhibited a moving picture film which showed the erection of a house of this type in 3 hours and 20 minutes by the McClintic-Marshall Co., Pittsburgh. Illustrations from this film are shown on the opposite page.

Discuss Fireproofing

"Fireproofing Structural Steel" was discussed by Rudolph P. Miller, consulting engineer, New York, who exhibited views of "fireproof" buildings dating from about 1890 to 1927. In many of the early examples shown, the protective covering of the structural members was insufficient and severe fires invariably caused the steel or cast-iron columns to buckle under their loads.

Mr. Miller then called attention to the enormous fire losses of the country and emphasized the need of erecting only reasonably fireproof buildings. He next showed the trend of construction in recent years. The Burlington building, Chicago and the Equitable building, New York and others were cited to show that the present construction seems to prevent fire from seriously affecting the framework. Incidentally, he declared that a large proportion of fires now experienced are "exposure fires"—fires in which the source of conflagration is outside the building. Commenting on this phase of the problem, he predicted that we may come to consider windowless buildings, in which lighting and ventilating comparable to that afforded by windows will be provided by artificial means.

C. R. Young, University of Toronto, Toronto, spoke on the tensile working stress of rivets. He stated that while rivets commonly resist tension in a combination of tension and flexure, or tension flexure and shear, current specifications are silent on the subject. Only a few specifications, he said, make any attempt to prescribe working stress for rivets in tension.

Prof. Young mentioned various tests on rivets conducted in Germany, Canada and the United States, and described the most recent investigation, which he conducted at the University at Toronto last summer. Rivets of 5/8, 3/4 and 7/8 inch diameter, with three different rivet grips, were tested.

The working stress on rivets in tension should depend both on the diameter of the rivet and upon the eccentricity with which the tensile force is applied. Upon this basis a formula has been devised such that a factor of safety of approximately 4 is maintained with respect to the minimum values obtained in the University of Toronto tests. At the same time the results obtained in other tests have been carefully considered

(*Concluded on Page* 1138)

Institute Carries Business Into Real Public Service

By Herbert Hoover

I AM glad to greet you at the opening of your annual convention. While I regret that I cannot be with you in person, it is indeed a pleasure to speak to you as directly as if I were present. In any event this new method of approach offers many advantages and some possibilities, not the least of which is that there is a known terminal of the speaker's remarks and a consequent great elimination of waste in your time. Moreover the response of an audience composed of a single microphone raises inspiration to oratorical efforts in about the same degree as an address directed to the bathroom door knob. So that if this method develops into general use, and would thus eliminate superfluous oratory in public speakers, I am all for it.

I am glad to congratulate you on the progress of your institute since its organization in 1921. Each year has brought a closer approach to the achievement of your objective and the fulfillment of the purpose for which the institute was founded. There has come about through your good offices a better understanding of the mutual problems of the steel fabricators and steel producers. Your effort to advance your industry through establishing standard codes of practice and ethics, and to take advantage of scientific and engineering research is in line with the advancing vision of our great industries in their broader concept of service to the consumer, and thus to the public.

This enlargement of vision, and this evident desire to be of service to the ultimate consumer are outstanding developments of the post-war era of American business. It makes for greater stability in business and a greater public understanding of the purpose of business as a part of our whole co-operative nation.

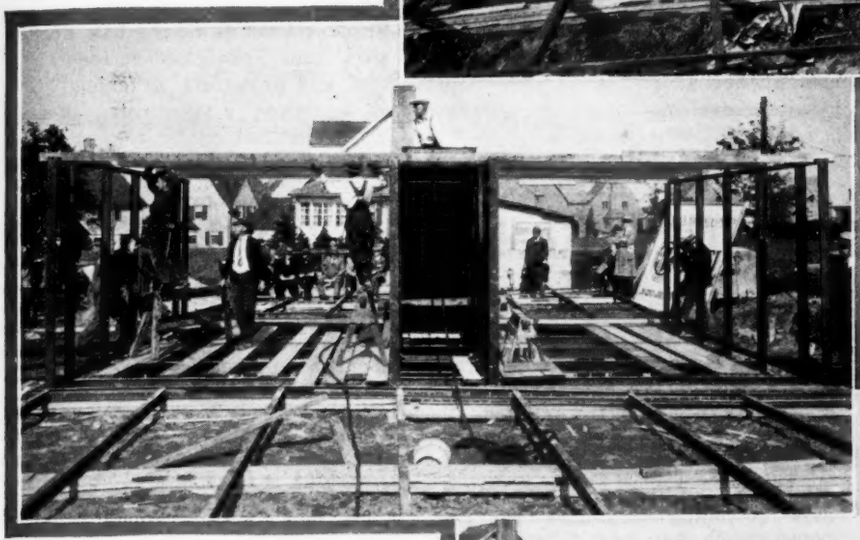
I was glad indeed to see your interest in welding as a newer method of assembling steel structures. Your welding research program may yield some very remarkable results and might even revolutionize steel construction methods.

Your effort is a real practical step based on sound scientific research. Its success would promise economies in construction costs surpassing those already achieved by your work in simplifying and standardizing design. You have already accomplished much in this latter direction, and the further work which your association is doing in co-operation with the bureau of standards in the development of standard steel specifications is another sound step.

Your work in the investigation of fireproofing is still another service you are doing for the consumer. In many ways your institute is carrying business into real service, and that is intelligent business.

In conclusion, I congratulate you on your progress, and wish you continued success and I wish to assure you that the department of commerce is glad to co-operate with you.

When it became evident that Secretary Hoover would not be able to go to Pinehurst to deliver his address in person, arrangements were made with the co-operation of the Victor Talking Machine Co. to place a recording machine in his office so that he might dictate his address and have it recorded for reproduction at the convention. This was done and the amplified words of Mr. Hoover, as heard by those attending the convention, carried clearly and distinctly to the far corners of the meeting room. This first notable trial of the "canned" speech was an unqualified success.—THE EDITORS.



ERECT STEEL FRAME FOR RESIDENCE in 3 1-3 hours

THESE illustrations are from a moving picture film shown in connection with the address "Steel in Residences" by Robert Tappan presented at the Wednesday afternoon session. They show the erection at Forest Hills, New York, of the steelwork for a small residence. Four bridgemen and three laborers comprised the erecting crew. The elapsed time for erection was 3 hours, 20 minutes.

More Activity in British Steel

Operations at 80 Per Cent—Tin Plate Market Improves, with Orders for 1,000,000 Boxes for Continent and South America—Pig Iron Demand Better—Continental Prices Firmer

European Headquarters,
IRON TRADE REVIEW,
Caxton House, Westminster, S. W.1

LONDON, Nov. 1.—Further improvement is noted in the British pig iron situation. An additional furnace has been blown in. American and continental melters are buying high-grade pig iron and ferromanganese from British makers. Imports of foreign pig iron have been stopped.

The market for tin plate is improving. British mills have booked 1,000,000 boxes for shipment to the Continent and South America. Prices, however, are unprofitable. Demand for galvanized sheets is at the lowest point of the year. Automobile manufacturers are using German strip steel.

British steelworks are operating at 80 per cent, on small orders. Shipyards and railroads are the heaviest buyers. Structural steel demand is dull, much foreign steel being used by fabricators. Foundries making heavy castings are busy.

A more active and firmer market is reported in France. Mills are working part time. Belgian business also shows some improvement, and prices are stiffening. German wire mills have organized a syndicate, effective Oct. 1.

British Trade Improvement Is Being Held

Office of IRON TRADE REVIEW,
Prince's Chambers, Corporation St.

BIRMINGHAM, Eng., Oct. 21.—(*European Staff Service*)—The trade improvement is consolidating. Pig irons are 2s ($0.48) higher than a fortnight ago. Nobody troubles to place orders of any tonnage as consignments can be got at very short notice, but the time is approaching when more blast furnaces will have to be restarted, stocks having almost disappeared. A beginning will be made by Gjer Mills & Co. on the East Coast at the end of the month. The export trade has improved and foreign pig iron no longer reaches the British market.

STERLING $4.87

The railways have realized the necessity of placing orders for rails and rolling stock and Hadfields have booked heavy contracts for manganese steel rails for British railways. Orders for rolling stock have been postponed much too long. Serious congestion has developed on the North Eastern railway and Birmingham engineers have intimated to Middlesbrough steel works that they do not propose to buy any more steel from that district. In view of serious congestion on the railways consignments take a minimum of a fortnight to reach the Midlands.

Steelworks are scouring the market for orders and one agent informed E. C. & J. Keay of Birmingham that he would not refuse an order for a ton of steel of any description.

The rebate scheme appears to have been generally accepted and foreign makers are well beaten in competition. The Belgians are revising their cartel with a view to lower prices. This will not help them in view of their inability to give reasonably early

Current Iron and Steel Prices of Europe

Dollars at Rates of Exchange, October 31	*British* Gross Tons U. K. Ports		*French* Metric Tons Channel Ports		*Belgium and Luxemburg* Metric Tons Channel Ports		*German* Metric Tons Rotterdam or North Sea Port	
Export Prices f. o. b. Ship at Port of Dispatch—By Cable		£ s d		£ s d		£ s d		£ s d
PIG IRON								
Foundry No. 3, Silicon 2.50-3.00	$15.83	3 5 0*	$14.12	2 18 0	$14.12	2 18 0	$14.61	3 0 0
Basic	.....	.....	14.61	3 0 0	14.61	3 0 0	14.61	3 0 0
Basic-bessemer	18.26	3 15 0†	13.88	2 17 0	13.88	2 17 0	14.61	3 0 0
Hematite, Phosphorus 0.02-0.05	18.02	3 14 0	21.81	555*	.....	.....	17.05	3 10 0
SEMIFINISHED STEEL								
Billets	$28.00	5 15 0	$20.70	4 5 0	$20.70	4 5 0	$21.18	4 7 0
Wire rods	47.48	9 15 0	26.79	5 10 0	26.79	5 10 0	26.79	5 10 0
FINISHED STEEL								
Standard rails	$37.74	7 15 0	$31.05	6 7 6	$31.05	6 7 6	$31.05	6 7 6
Merchant bars	1.58c	7 5 0	1.04c	4 14 6	1.04c	4 14 6	1.02c	4 13 0
Structural shapes	1.55c	7 2 6	1.00c	4 8 0	1.00c	4 8 0	1.01c	4 12 0
Plates, ship, bridge and tank	1.71c	7 17 6	1.32c	6 0 0	1.31c	5 19 0	1.32c	6 0 0
Sheets, black, 24 gage	2.39c	11 0 0	2.01c	9 2 6	2.01c	9 2 6	2.86c	13 0 0
Sheets, galvanized, 24 gage, corrugated	2.96c	13 12 6	3.96c	18 0 0	3.71c	2,850*	3.74c	17 0 0
Bands and strips	2.28c	10 10 0	1.16c	5 5 0	1.16c	5 5 0	1.49c	6 15 0
Plain wire, base	2.12c	9 15 0	1.57c	7 2 6	1.57c	7 2 6	1.60c	7 5 0
Galvanized wire, base	3.04c	14 0 0	2.04c	9 5 0	2.04c	9 5 0	2.09c	9 10 0
Wire nails, base	2.83c	13 0 0	1.73c	7 17 6	1.73c	7 17 6	1.76c	8 0 0
Tin plate, base box 108 pounds	$ 4.38	0 18 0	.....	.....	.....	.....	$ 6.82	1 8 0

*Francs

Domestic Prices at Works or Furnace—Last Reported			Francs		Francs		Marks	
Foundry No. 3 Pig Iron, Silicon 2.50—3.00	$16.44	3 7 6	$16.51	420(2)	$17.10	615	$17.02	74
Basic pig iron	.....	.....	17.88	455(1)	15.71	565	19.32	84
Furnace coke	3.17	0 13 0	6.09	155	5.14	185	4.95	21.50
Billets	28.00	5 15 0	19.26	490	21.96	790	25.88	112.50
Standard rails	1.74c	8 0 0	1.40c	775	1.43c	1,100	1.46c	140
Merchant bars	1.63c	7 10 0	1.00c	545	1.12c	865	1.40c	134
Shapes	1.66c	7 12 6	1.00c	520	1.11c	845	1.37c	131
Plates, ship, bridge and tank	1.82c	8 7 6	1.25c	695	1.43c	1,080	1.55c	149
Sheets, black, 24 gage	2.50c	11 10 0	2.32c	1,290	2.21c	1,700	2.29c	220
Sheets, galvanized 24 gage, corrugated	3.04c	14 0 0	4.05c	2,250	3.71c	2,850	3.65c	350
Plain wire	2.12c	9 15 0	1.62c	900	2.15c	1,650	2.03c	195
Bands and Strips	2.28c	10 10 0	1.21c	670	1.29c	995	1.61c	154

*Middlesbrough; †Scotch foundry iron; (1) Basic-bessemer; (2) Longway. British export furnace coke £0 13s 0d ($3.17) f. o. b. Ferromanganese £18 11s 3d ($90.40) delivered Atlantic seaboard, duty paid. German ferromanganese £15 0s 0d ($73.05) f. o. b.

The equivalent prices in American currency are in dollars per ton for pig iron, coke, semi-finished steel and rails; finished steel is quoted in cents per pound and tin plate in dollars per box. British quotations are for basic open-hearth steel; French, Belgian, Luxemburg, and German are for basic-bessemer steel.

delivery. As a rule they require three months, whereas British steel can be got at twenty-four hours' notice.

In the Barrow area there is no lack of business but bitter complaints are made as to prices. American inquiries for ferromanganese have improved. Shipbuilding is brisk in that district and inquiries are coming forward every day.

The wrought iron industry of Staffordshire is depressed and Lancashire is capturing more of the overseas business owing to her favorable position on the coast.

The galvanized sheet industry does not improve, prices having settled down at the reduced figure of £13 15s ($66.98). The works are just keeping going.

There are signs of tin plate improvement. Several hundred thousand boxes have been ordered in the Swansea area but makers strongly complain that 17s 6d ($4.24) does not cover the cost of production. Welsh bars remain at £5 15s ($24.99) and foreign at £4 13s 6d ($22.75). The Welsh joint industrial council has decided to reduce the working shift, thereby reversing a decision recently made. The price regulation attempt has broken down completely and prices are fixed by competition in the open market. The quarterly ascertainment governing wages in the steel trade of South Wales shows an average price of bars of £5 13s 0½d ($27.50) and gives the men a reduction of 5 per cent.

The foundry trade is busier, revival in the steel trade having brought some orders for heavy rolls. John Harper & Sons of Willenhall have completely rebuilt their factory after inspecting the best plant in Germany and America. This is one of the finest foundries in England and the firm has abundance of work.

The most active department is cast iron pipe which has years' work on hand. This trade has received an immense impetus from the system of rotary casting introduced a few years ago.

Heavy steel scrap is nearly unsalable though the price is maintained at £3 ($14.61) delivered South Wales.

German Trade Heavier

Berlin, Oct. 17.—(*European Staff Service*)—Germany's exports of iron and steel products for August showed an increase of 7775 metric tons, compared with the preceding month. Exports in August were 344,981 metric tons, compared with 352,756 tons in July, 335,210 tons in June, 514,961 tons in January, and 461,818 tons in August, 1926. Among the principal items exported in August were 81,483 tons of bars and bands, 34,305 tons of plates and sheets, 33,609 tons of rails and track fastenings, 31,134 tons of rolled and drawn wire, 21,004 tons of pig iron and 20,251 tons of blooms, billets and sheet bars.

German imports were 299,919 metric tons in August, compared with 253,215 tons in July, 252,625 tons in June, 188,217 tons in January, and 112,275 tons in August, 1926. Among the principal items imported in August were 97,332 tons of bars and bands, 85,295 tons of scrap, 32,134 tons of pig iron, and 25,992 tons of blooms, billets and sheet bars.

Belgian Steel Exports at High Mark

Brussels, Oct. 20.—(*European Staff Service*)—Exports of steel from the Belgo-Luxemburg economic union in August were the second highest for the year, while pig iron exports were below July. Imports of pig iron in August were the highest of the year. The figures follow:

Mon.	IMPORTS		EXPORTS	
ave.	Pig iron	Steel	Pig iron	Steel
1925	27,095	15,860	8,060	242,325
1926	27,505	27,265	13,105	304,075
1927				
Jan.	30,253	23,086	17,742	332,921
Feb.	21,876	20,793	8,191	367,723
Mar.	26,172	33,192	10,713	440,445
Apr.	27,351	26,579	15,363	372,296
May	27,843	24,229	10,766	371,211
June	34,966	28,961	10,474	359,563
July	35,334	22,696	13,118	373,255
Aug.	42,913	27,824	11,368	436,631

French Elections Halt Business

Office of IRON TRADE REVIEW,
9 Rue de Londres

Franc—3.92c

PARIS, Oct. 20.—(*European Staff Service*)—Although the general situation in the iron and steel market continues quiet, some works have sufficient orders on books for several weeks. The agricultural districts are buying only in small quantities for immediate needs. Parliamentary elections in May, 1928, already are beginning to affect business. The financial situation being a platform on which the principal parties are competing, there is growing uneasiness among industrial and commercial sections as to what the outcome will be. The business results of the automobile exhibition which now is taking place are awaited with interest, as the quantity of buying will serve as a good barometer of the state of prosperity of a large number of consumers. Incidentally, the tendency among automobile manufacturers in France is to increase the number of cylinders, thus following American principles. Notwithstanding the pre-eminence of French makers, a large number of foreign concerns exhibited models in Paris, America leading, followed by Spain, Italy, Germany and Great Britain. The tariff controversy between France and America does not materially affect the interests of iron and steel manufacturers.

A decrease of 15 francs (59 cents) per ton on blast furnace coke was made by the collieries in the Nord and Pas-de-Calais, effective Oct. 1.

Demand for pig iron is small as activities of foundries are restricted. Business in semifinished steel is quiet; a few orders are being passed at prices which are not profitable. Basic bessemer blooms are sold at about 455 francs ($17.80) per ton, billets averaging 490 francs ($19.20). Following the conversations which took place in Luxemburg at the end of last month, the idea of an international agreement for export selling of semi-finished steel is gaining ground, and a definite scheme has been submitted to the principal makers as a basis for future discussion.

The price of beams has experienced a further drop, but without attracting much business. The same may be said of merchant bars, which can be obtained at 550 to 560 francs ($21.50 to $21.62). Plates and sheets are weak and it is reported that makers are not all following the list of extras which was put into effect by the Comité des Forges a year ago. German competition has been noted in automobile sheets. Wire products are unsatisfactory, owing to cut-throat competition between makers.

French Imports Lowest

Paris, Oct. 20.—(*European Staff Service*)—Exports of iron and steel from France in August exceeded those of July. Imports of steel in August reached the lowest figure of the year. The figures are:

Mon.	IMPORTS		EXPORTS	
ave.	Pig iron	Steel	Pig iron	Steel
1924	3,540	56,780	63,900	187,380
1925	2,693	11,703	58,855	272,270
1926	1,990	11,840	58,545	256,050
1927				
Jan.	1,153	6,412	82,286	343,378
Feb.	2,536	8,073	69,370	382,368
March	1,730	9,199	65,906	377,779
April	1,720	8,043	70,252	410,286
May	3,978	7,811	85,844	345,584
June	6,129	6,941	75,119	330,151
July	5,083	6,122	68,454	351,754
August	3,454	4,979	74,566	367,473

French Coke Imports Up

Paris, Oct. 20.—(*European Staff Service*)—While production of coke in France in August was close to that of July, imports were the highest of the year except for January. Figures are as follows:

Mon. ave	Production	Imports	Exports
1913	335,620	255,835	17,085
1924	220,765	350,160	42,330
1925	255,410	419,410	39,440
1926	313,950	462,915	39,320
1927			
Jan.	348,957	528,861	15,608
Feb.	312,525	431,972	22,363
March	344,101	394,187	50,753
April	331,237	388,781	22,519
May	336,740	426,314	32,792
June	336,029	396,953	35,547
July	343,769	194,994	43,296
August	330,385	457,980	39,588

Industrial Men in the Day's News

P. E. Bliss, Elected President National Machine Tool Builders

ELECTION to leadership of the national association is an honor and distinction which has come to him in recognition of his contributions to the organization and to the machine tool industry.

WITHOUT the unusual and the extraordinary, his career is a succession of advancements to positions of increasing responsibility and importance.

ALTHOUGH admitting that he plays golf occasionally, his outdoor recreation is obtained chiefly in fishing. He is an inveterate reader of good literature.

ELECTION to the presidency of the National Machine Tool Builders' association is the honor just conferred upon P. E. Bliss, vice president of the Warner & Swasey Co., Cleveland, builder of turret lathes and manufacturer of precision instruments. Mr. Bliss has been a director of the Machine Tool association for the past two years, and this year served as a member of the exposition committee that was responsible for the marked success with which the first independent show was received by industry.

A quiet, modest man, Mr. Bliss decries any attempt to segregate his achievements as befitting of comment. In an interview with an IRON TRADE REVIEW representative Mr. Bliss claimed that his life had been a record of only modest contributions and attainments. But, nevertheless, his career has been marked by a succession of advancements, his calm efficiency being called constantly to wider fields and to greater responsibilities. A straightforward, honest and God-fearing man, his character and personality have made for him a great number of staunch friends.

Mr. Bliss was born in Cleveland, Dec. 14, 1885. His parents moved to the country shortly thereafter and he attended school at North Fairfield, O. He matriculated at Ohio Wesleyan university, Delaware, O., in 1902 where he studied the arts course. Following his collegiate work Mr. Bliss entered into the Young Men's Christian association field, serving in New York and Cleveland until 1910. It was in June of that year that he became affiliated with the Warner & Swasey Co. as a clerk in the accounting department. During the years of service that he has seen with the Warner & Swasey Co. he has worked with practically all departments, both in sales and shop divisions. His attention has been centered for a number of years on the general administrative side of the business.

He was advanced through the offices of cashier and auditor to the position of treasurer, which he became in 1917. He held that office until 1923 when he was advanced to the vice presidency, which title he now holds.

In addition to his activities in the National Machine Tool Builders' association, Mr. Bliss is a member of the American Society of Automotive Engineers and the Cleveland Engineering society. He is identified in an official capacity also with several other companies. Mr. Bliss is a member of the Union, Mid-Day and Canterbury Country clubs of Cleveland and the Castalia Sporting club of Sandusky, O.

Although playing golf occasionally, Mr. Bliss claims he is not proficient enough at the sport to be a real "bug," and finds his most relaxing recreation in fishing. Mr. Bliss is an inveterate reader, being attracted mostly to the leading works on biography, history and government.

Men of Industry

Personal News of a Business Character Pertaining to the Iron and Steel and Related Fields of Enterprise

E H. HASLAM, formerly president of Hadfield-Penfield Steel Co., Bucyrus, O., has been made Chicago district manager of Elliott Co., Pittsburgh, power plant equipment manufacturer. Mr. Haslam was at one time vice president of Mackintosh-Hemphill Co., Pittsburgh, and supervisor of engineering and new construction with the Steel & Tube Co. of America. He is a graduate of the Bradford Technical college in England, and was associated for a time with Hadfields Ltd., Sheffield, Eng., to assist in the development of that company's interests in America.

H. K. Gowdy, now associated with the Boston district office of Elliott Co., was at one time chief engineer of the Homer street power plant of the Newton & Boston street railway and the West Penn Power Co., and superintendent of power plants with the Pittsburgh railways.

Michel G. Malti, specialist in electrical research work at Cornell university, Ithaca, N. Y., is with Elliott Co. in a consulting capacity.

* * *

E. E. Loomis, president of the Lehigh Valley railroad, has been elected a director of the American Can Co., succeeding Francis Hine, deceased.

* * *

E. V. Schupp and E. A. Mansfield have been appointed western New York sales representatives of the Cuyahoga Steel & Wire Co., Cleveland, with headquarters in Buffalo.

* * *

A. L. Curtis has been awarded the Carnegie gold medal for 1925 by the Iron and Steel institute, Great Britain, for his research on steel molding sand.

* * *

J. M. Woods, formerly assistant sales manager, Semet-Solvay Co., Detroit, has been appointed sales manager of that company, succeeding J. A. Ballard.

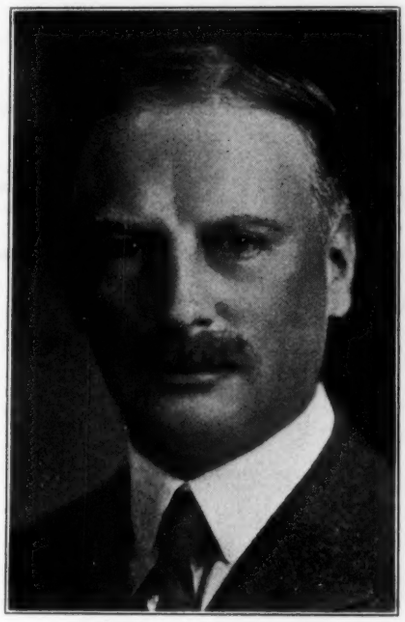
* * *

A. L. Culbertson, vice president and assistant manager; O. D. Rice, engineer in charge of design, service and operation; D. W. Ewalt, sales engineer; and J. W. Barker, construction engineer, all of the Chapman-Stein Furnace Co., Mt. Vernon, O., have resigned their former connections and are now affiliated with the Rust Engineering Co., Pittsburgh.

W. C. Buell, formerly with the Rust company furnace department, has resigned.

* * *

William A. Force III has been



E. H. HASLAM

elected president of William A. Force & Co., succeeding William A. Force, whose death was announced in IRON TRADE REVIEW, issue of Oct. 6.

* * *

George M. Beard, with the Detroit office of the Seneca Iron & Steel Co., Buffalo, for several years, has been made district sales manager, with offices at 2-236 General Motors building, Detroit.

* * *

J. E. Redman, assistant to the president of the American Bosch Magneto Corp., Springfield, Mass., has been appointed general sales manager.

Wallace B. Blood has been made sales promotion manager of the magneto corporation.

* * *

Leonard Peckitt, president of the Warren Foundry & Pipe Corp., New York, was confined to his apartments at the Engineers club there recently as the result of injuries sustained Oct. 19 when he was struck by a taxicab.

* * *

H. E. Yeager has joined the Philadelphia sales organization of the Donner Steel Co., Buffalo, and will handle pig iron sales in that territory with his offices in the Morris building.

* * *

Harold H. Harper, formerly with the research department of the Eagle Picher Lead Co., Chicago, has been made assistant to J. H. Calbeck in the latter's laboratories at Joplin, Mo.

* * *

O. C. White, formerly vice president and general manager of the Youngstown Boiler & Tank Co., Youngstown, O., has taken charge of sales in Michigan for Sistersville Tank & Boiler Works, Sistersville, W. Va.

* * *

Robert J. Piersol, formerly research director for Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., is now a consulting engineer at 3617 Dawson street, Pittsburgh, specializing in the installation and operation of chromium plating.

* * *

Richard Garlick has been elected a member of the advisory committee of the Youngstown Sheet & Tube Co., Youngstown, O., succeeding E. L. Ford, who died last summer.

John W. Ford and Philip Wick have been elected members of the board of directors of the Sheet & Tube company succeeding E. L. Ford and John Stambaugh, as announced briefly in IRON TRADE REVIEW, issue of Oct. 27.

* * *

O. C. Callow, formerly electrical superintendent, Trumbull-Cliffs Furnace Co., Warren, O., has become associated with the Freyn Engineering Co. Chicago as assistant electrical engineer. He is a native of England, receiving his early training with the British Westinghouse Electric & Mfg. Co. at Manchester. He was made electrical superintendent in a cement mill, upon coming to Canada, and he entered later the employ of the former Steel & Tube

Co. of America at its Indiana Harbor plant.

Harold M. Eddy, who has been placed in charge of a new branch office of Freyn company, opened at Cleveland, is a native of Cleveland and a graduate of Case School of Applied Science, Cleveland, and Kenyon college, Gambier, O. He was employed at one time by the Cleveland Electric Illuminating Co. as field engineer, and later as field engineer for Corrigan, McKinney Steel Co., Cleveland.

* * *

W. J. Kihn has resigned his position as foundry engineer for the Worthington Pump & Machinery Corp., at Buffalo.

* * *

Gordon Lefebvre has been elected vice president in charge of operations, Oakland Motor Car Co., Pontiac, Mich., succeeding A. J. Brandt, who has resigned. Mr. Lefebvre had been with the General Motors of Canada Ltd., since March, 1926, where he was vice president and manager.

* * *

R. F. Callway has been transferred from the managership of the Detroit sales branch of the Frigidaire Corp., Dayton, O., to the executive offices in the latter city.

* * *

Peter Tazelaar has been made sales manager of the Commonwealth Brass Corp., Detroit, following eight years as representative of the company at New York.

* * *

William F. Brandt, general superintendent, and A. D. Cariger, sales manager of the tank and pump division of the Wayne Co., Fort Wayne, Ind., pump and tank manufacturer, have been made vice presidents. Mr. Brandt has been with the company 16 years, starting as a machinist, while Mr. Cariger became associated with the company three years ago, following a connection with the S. F. Bowser & Co., also a pump maker.

* * *

B. N. Pollak has been made sales and advertising manager of the Lion Electrical Mfg. Co., Brooklyn, N. Y.

* * *

Edwin H. Lundgren has been made vice president and general manager, Combustion Engineering Corp., New York.

* * *

C. B. Goodspeed has been elected second vice president of the Buckeye Steel Castings Co., Columbus, O., succeeding John C. Whitridge, whose promotion to president was announced in IRON TRADE REVIEW Oct. 22.

Obituaries

NORMAN S. LAWRENCE, vice president and director of sales, Whiting Corp., Harvey, Ill., manufacturer of foundry equipment, cranes, etc., who died Oct. 26 at his home in Chicago, had been with that company for about 20 years. He was a graduate from Cornell university, Ithaca, N. Y., with the degree of mechanical engineer in 1904. He spent several years with the Robert W. Hunt Co., engineer, and then joined the Whiting Corp., as estimator, later becoming chief estimator, assistant sales manager and vice president and director of sales. Mr. Lawrence also was president of the Swenson Evaporator Co., a subsidiary of the Whiting Corp. He had been active in the American Foundrymen's association and the Electric Overhead Crane institute, as well as being a member of several other clubs and organizations.

* * *

W. Marshall Page, vice president of the Copperweld Steel Co., Rankin, Pa., died Oct. 25.

* * *

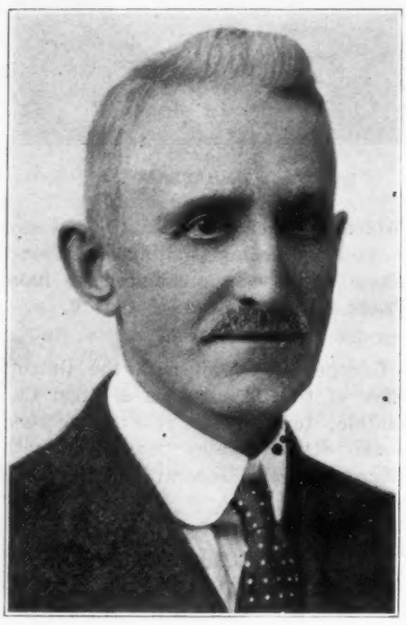
A. H. Cohn, senior member of A. H. Cohn & Sons, Butler, Pa., died Oct. 18.

* * *

D. H. Roberts, founder of the Roberts Brass Co., one of the oldest manufacturing companies in Detroit, died recently at his home in Hendersonville, N. C. He was chairman of the board of directors of the brass company. He had founded also the McRae-Roberts Co., but left it 20 years ago.

* * *

Adam W. Slater, 60, safety inspector for the Carnegie Steel Co., Pittsburgh, died at his home in Homestead Park, Pa., Oct. 27. He was born at McKeesport, Pa., Feb. 2, 1867, and was an employe for nearly half a century of companies now United States Steel Corp. subsidiaries. He first was employed at the DeWees-Wood plant at McKeesport, next at the National works of the National Tube Co., that city, and then at the Homestead plant of the Carnegie Steel Co. He served in the mechanical departments at these plants. In 1910 he was transferred to the general office of the Carnegie company and was made safety inspector, in which position he served for 17 years. He was instrumental in helping to place the safety work of the Carnegie company on the high plane which it occupies.



ADAM W. SLATER

* * *

Edward Browning, 41, secretary of the Belmont Iron Works, Philadelphia, structural steel fabricator, died recently.

* * *

William Bromwell Melish, 75, president of the Bromwell Brush & Wire Co., Cincinnati, died recently at his home in that city. He was the grandson of the founder of the company.

* * *

David Williams, formerly publisher and owner of *Iron Age*, New York, and other publications, died Oct. 28 at his summer home at Rogers Rock, on Lake George, N. Y., aged 86. He was born at Waterford, Ireland, coming to the United States in 1850. Following his graduation from Middletown academy in 1857, he became associated with his father in publishing *Iron Age*, established two years

previously. In 1868 he became sole proprietor of the magazine and later established other technical publications. Mr. Williams retired in 1909. He was a member of the Engineers club, the American Institute of Mining and Metallurgical Engineers, and the American Trade Press association.

* * *

Gorham F. Bassett, 77, one of the founders of the Bassett-Pressley Steel Co., later sold to the Republic Iron & Steel Co., Youngstown, O., died recently at his summer home in Hyannis, Mass. The Bassett-Pressley company was formed 35 years ago and upon its purchase by the Republic company, Mr. Bassett retired.

* * *

Hamilton Vose, 73, pioneer of the middle western foundry industry, died at his home in Milwaukee, Oct. 22. He had been a partner in Dutcher, Vose & Adams, retiring several years ago.

* * *

C. F. O'Neil, 56, who died Oct. 18 at his home in San Francisco, had been the United States representative of the Atlantic, Gulf & Pacific Co. since 1920. For many years prior to that he was vice president of the San Francisco Bridge Co.

* * *

John J. Mitchell Sr., chairman of the board of the Illinois Merchants' Trust Co., Chicago, died as the result of an automobile accident, Oct. 29. He had been a director in numerous enterprises, including the Pullman Co., International Harvester Co., and Commonwealth Edison Co.

* * *

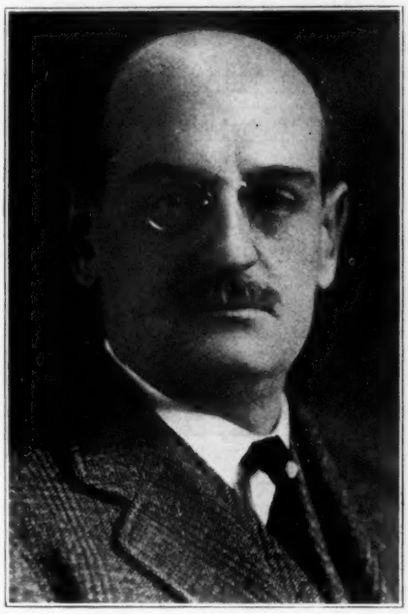
John T. Gill, 70, senior member of John Gill & Sons, general contractors, president of Cleveland Co-operative Stove Co., both of Cleveland, died Oct. 31. He was born in that city and was the son of the founder of the contracting company which gained a national reputation for the magnitude of the structures built.

* * *

M. Dow Platt, assistant treasurer of the Industrial Brown Hoist Works, died at Flint, Mich., last week from injuries sustained in an automobile accident. He had been office manager and then secretary-treasurer of the Industrial Works, Bay City, Mich., prior to its consolidation with the Brown Hoisting Machinery Co., Cleveland, and since that time had maintained his headquarters at Bay City.

* * *

James M. Camp, director of the bureau of technical instruction of the Carnegie Steel Co., Pittsburgh, who died Oct. 24, had been connected with the iron and steel industry 45 years. He was born in Pittsburgh, Nov. 12, 1858, and was graduated from the University of Pittsburgh with a degree in civil engineering. His first connection with the industry was in 1882 when he was made chief chemist of the Pittsburgh Steel Casting Co., Pittsburgh, following which he was associated with the Allegheny Bessemer Steel Co., which later became the Duquesne works of the Carnegie Steel Co. He remained there until 1911 in charge of chemical and physical testing and served as assistant superintendent of blast furnaces for a year. Mr. Camp was appointed chairman of the chemists' committee of the United States Steel



JAMES M. CAMP

Corp. in 1907, which position he held until his death. Since 1911 he had been director of the educational activities of the Carnegie company. He was a member of the Iron and Steel institute of Great Britain, the American Iron and Steel institute, the Engineers' Society of Western Pennsylvania, the American Society for Steel Treating and the American Chemical society.

Partnership Spirit Urged by Schwab

(*Concluded from Page* 1087)

steel industry must be the proper and economic distribution and selling of its product. I do not mean to say that we have anything in mind that is not in strict conformity with the regulations and laws of the country; that always must be fundamental in this institution. But I do say that destructive competition in an industry as large as ours, for the sole purpose of gaining a position in the industry, is ill-advised and costly to the people who have their money in the industry. Think of the fact that eight or nine billions of dollars are invested in the steel industry, and on the average we are not earning as much on our investment as we would if we had put our money in gilt-edge bonds. That is a wrong condition. What we want in this industry is the sincere and hearty co-operation of everybody in it. As Judge Gary has so often expressed it: live and let live. These works are here and we have our customers and we have our trade and we have our position, and therefore we must try to respect our relative positions and see if we cannot do something toward the betterment of our returns, profits and business. That is the real purpose of the co-operative spirit that is necessary for the betterment of our business and the industry.

Now, gentlemen, I have never seen in any branch of life anything worth while accomplished that was not accomplished by co-operation. No individual, whether it be man or woman, can ascend to great heights of successful conduct of business or affairs who is not in co-operation with others. Mr. Farrell with his great industry, or Mr. Campbell or Mr. King, as an individual could do little, without the association of loyal people about him. And what is true of an individual business is true of a great industry. Therefore, let us regard ourselves as partners and directors of a great industry and do what we can for the upbuilding of this business in a proper, methodical and happy way.

I speak with authority, after 45 years in business, when I say that the real joy of business and the real happiness in business has been the happy association with those with whom I have done that business. The real joy of this office has come from your approval of such happy association. It matters not how rich you grow, there is nothing that will bring the thrill of joy like the approval and appreciation of those with whom one is associated in business.

Now, my friends, in conclusion, let me say to you again, I thank you sincerely for the recognition that you have given me in elevating me to this high office. I thank the directors especially for their expressions of appreciation and confidence, approval and help in every direction. I especially thank Mr. Farrell for the finest nomination I have ever heard.

Exports, Imports On Decline

September Receipts Total Only 58,464 Tons While Shipments Are 166,352 Tons, or 10,000 Tons Less Than August—Scrap Is Principal Export—Structural Shape Imports in Good Tonnage

IRON and steel exports, totaling 166,352 tons and imports totaling 58,464 tons, both declined in September, according to reports from the iron and steel division of the department of commerce, as announced briefly in IRON TRADE REVIEW last week. In August, exports were 175,636 tons, while imports totaled 68,386 tons.

Although scrap exports increased in September over August, totaling in the former month 30,084 tons, other exports dropped. Tin plate shipments, totaling 16,119 tons in August dropped to 13,484 tons in September.

Pig iron imports fell off nearly 40 per cent in September, going to 9169 tons from 14,084 tons in August.

IMPORTS AND EXPORTS

Gross Tons

	—1927—		—1926—	
	Imports	Exports	Imports	Exports
Jan.	63,404	215,235	79,067	174,585
Feb.	49,451	166,128	100,213	157,187
March	61,872	171,094	93,107	169,438
April	60,374	192,339	107,636	194,449
May	79,814	202,708	108,781	173,418
June	69,017	184,364	124,215	159,506
July	61,112	190,502	82,411	194,717
Aug.	68,386	175,636	91,578	171,588
Sept.	58,464	166,352	85,484	182,071
Oct.			81,830	172,070
Nov.			81,259	219,830
Dec.			75,559	198,189
Totals	571,894	1,664,358	1,111,090	2,167,048

Smaller tonnages in other products were noted in September, accounting for the decline of the total import figures.

Iron ore imports into the United States totaled 224,524 tons in September, compared with 303,586 tons in August, the greatest drop being noted in Sweden's shipments which in August were 41,881 tons and in Seutember only 7676 tons. Algeria and Tunis sent 34,000 tons less iron ore in September than in August.

All foreign markets showed smaller receipts in September than in August, with South America in the greatest decline. In September, exports to that market totaled 23,295 tons, while the August amount was 27,410 tons. The Far East, which in August was the only market to show a gain, totaling 38,232 tons at that time, declined to 35,720 tons in September.

Belgium sent 4000 tons less iron and steel to the United States in September than in August, with few countries sending more in the former month than in the latter. When this did occur, the gain generally was slight. Imports for the nine months ending Sept. 30, 1927, totaled 571,894 tons, compared with 872,442 tons in the corresponding period in 1926.

Exports of steel bars to Canada in September totaled 3875 tons, compared with 5038 tons in August. All

ORIGIN OF PIG IRON IMPORTS

Gross Tons

From:	Sept.	Aug.
France	1,000	1,000
Germany	500	560
Netherlands	1,319	2,422
United Kingdom	90	.....
Mexico	18	.....
British India	6,242	9,703
Belgium	.....	399
Total	9,169	14,084

ORIGIN OF IRON ORE IMPORTS

Gross Tons

From:	Sept.	Aug.
Newfoundland	14,937	13,469
Spain	15,100	7,698
Sweden	7,676	41,881
Canada	1,962	5,513
Cuba	22,000	22,000
Chile	131,000	121,300
Algeria and Tunis	31,849	74,579
Italy	.....	7,700
Norway	.....	9,446
Total	224,524	303,586

ORIGIN OF MANGANESE IMPORTS

(Concentrates)

Gross Tons

From:	Sept.	Aug.
Soviet Russia in Europe	21,504	11,057
Canada	18	82
Brazil	10,156	5,939
Chile	202	1,371
British India	4,149	3,097
Germany	.....	7
British West Africa	.....	1,411
Total	36,029	22,964

ORIGIN OF FERROMANGANESE IMPORTS

Gross Tons

From:	Sept.	Aug.
United Kingdom	699	984
Canada	1,198	1,787
France	.....	12
Italy	.....	5
Norway	.....	1,274
Total	1,897	4,062

ORIGIN OF IMPORTS

Gross Tons

From:	Cast iron pipe	Steel bars	Steel scrap	Ingots, blooms, etc.
Cuba	470	.....	.....	.....
Mexico	265	.....	.....	.....
Canada	219	.....	3,186	7
Belgium	.....	6,005	.....	63
Austria	.....	27	.....	.....
France	.....	1,050	.....	580
Germany	.....	1,284	.....	.....
Netherlands	.....	3	.....	.....
Sweden	.....	471	34	175
United Kingdom	.....	125	82	16
Other countries	278	.....	.....	175
Total	1,232	9,018	3,302	841

IMPORTS OF IRON AND STEEL

Gross Tons

	Sept. 1927	August 1927	January through September 1927	1926
Pig iron	9,169	14,084	94,449	394,583
Ferromanganese and alloys(1).	1,897	4,062	21,111	29,039
Ferrosilicon(2).	126	581	6,563	8,280
Ferrochrome(3).	30	..	412	429
Scrap	3,302	4,681	45,165	59,310
Iron slabs	..	..	..	323
Steel ingots, billets, etc.	841	951	9,449	26,727
Steel bars	9,018	6,926	72,465	80,075
Iron bars	162	189	3,158	4,172
Wire rods	1,328	2,597	11,415	6,726
Hoops, bands, and scrolls	2,387	3,863	26,389	18,442
Boiler and other plate	24	496	3,248	3,622
Sheets, skelp, and saw plate	2,451	391	12,006	6,629
Tin plate	22	35	980	2,035
Structural shapes	15,639	16,079	119,660	84,405
Rails and splice bars	2,773	1,133	14,620	54,320
Cast iron pipe	6,076	8,343	69,350	55,848
Other pipe and tubes	1,434	2,587	43,158	18,598
Barbed wire	404	111	3,486	2,616
Round iron and steel wire	251	196	3,170	2,930
Steel telegraph, telephone wire	1	..	32	121
Flat wire and strip steel	169	199	1,974	2,761
Wire rope and strand	139	140	1,799	2,156
Other wire	163	13	467	1,430
Nails, tacks	376	539	4,921	3,613
Bolts, nuts, rivets, washers	40	65	289	305
Castings and forgings	242	125	2,158	1,911
Totals	58,464	68,386	571,894	871,407

(1) Manganese content
(2) Silicon content
(3) Chromium content

IMPORTS BY COUNTRIES OF ORIGIN

Gross Tons

	Sept. 1927	January through Sept. 1927	1926
Austria	47	744	676
Belgium	14,524	158,399	167,268
Czechoslovakia	909	4,517	1,310
France	12,957	101,755	103,550
Germany	11,697	104,999	206,349
Italy	7	305	669
Netherlands	1,528	22,195	75,155
Norway	6	7,039	11,326
Poland and Danzig	2,845	5,010	816
Sweden	1,215	16,642	21,843
United Kingdom	1,559	42,505	114,969
Canada	4,899	57,277	63,368
Mexico	28	235	8,061
British India	6,242	36,664	.....
Japan, inc. Chosen	1	22	17
Denmark and Faroe Islands	.....	108	2,409
Spain	.....	30	2
Turkey in Europe	.....	1	.....
Guatemala	.....	32	.....
Virgin Islands	.....	31	3
Brazil	.....	7	.....
India	.....	8,003	79,402
Hongkong	.....	6	1
Australia	.....	1	.....
Esthonia	.....	54	.....
Honduras	.....	4	1
Cuba	.....	2,189	5,757
Panama	.....	19	7,748
French W. Indies	.....	120	1
Other Countries	.....	.....	2,841
Total	58,464	571,894	872,442

exports of this product in September declined nearly 3000 tons from August.

Steel rail exports to Japan in September were 2337 tons out of the total rail exports of 11,897.

Imports of structural shapes were of fair volume, totaling 15,639 tons, compared with 16,079 tons imported in August. Boiler and other plate imports dropped to 24 tons in September from the August total of 496 tons. Castings and forgings imports gained slightly in September. Barbed wire imports totaled 404 tons in September compared with 111 tons in August.

EXPORTS OF IRON AND STEEL

Gross Tons

	Sept. 1927	August 1927	January through September 1927	1926
Pig iron, not including ferro-alloys	3,513	4,854	35,088	16,628
Ferromanganese and spiegeleisen	5	138	534	542
Scrap	30,084	23,376	175,012	83,021
Ingots, blooms, skelp, etc.	11,700	9,072	70,723	67,052
Iron bars	126	243	3,482	3,909
Steel bars	7,323	10,050	83,289	101,228
Alloy steel bars	292	284	4,028	3,728
Wire rods	881	1,612	11,784	13,326
Plates	9,780	12,385	103,726	102,601
Galvanized sheets	10,451	10,936	122,434	130,146
Black steel sheets	7,189	12,283	125,846	125,708
Black iron sheets	1,251	1,436	12,828	14,115
Hoops, bands and strip	2,253	2,480	33,280	35,810
Tin plate, terne plate	13,484	16,119	202,214	162,935
Structural shapes, plain	13,366	14,086	106,711	120,100
Structural materials, fabricated	4,251	7,854	48,787	63,491
Metal lath	464	340	3,533	3,413
Steel rails	11,897	12,534	135,572	130,810
Rail fastenings, switches, etc.	1,807	2,996	26,823	32,431
Boiler tubes and welded pipe	17,246	15,396	199,245	194,395
Malleable iron screwed pipe fittings	778	699	7,502	9,111
Cast iron screwed pipe fittings	860	534	5,346	7,503
Cast iron pressure pipe and fittings	472	619	8,212	9,355
Cast iron soil pipe and fittings	760	666	6,457	8,577
Plain wire	4,011	2,287	25,841	25,880
Barbed wire woven wire fencing	4,763	5,212	38,609	43,172
Wire cloth and screening	185	200	1,755	1,513
Wire rope	328	338	3,414	3,663
Insulated wire and cable	56	65	396	572
Other wire	820	702	7,506	6,599
Wire, nails	1,102	728	6,595	9,158
Nails other than wire	517	829	5,598	5,668
Tacks	83	64	713	717
Horseshoes	47	62	394	474
Bolts, nuts, rivets, except tacks	849	1,202	9,010	10,442
Car wheels and axles	1,802	999	13,828	13,847
Iron castings	892	1,131	8,752	7,112
Steel castings	387	603	5,723	6,083
Forgings	277	222	3,768	2,260
Totals	166,352	175,636	1,664,358	1,577,077

DESTINATION OF EXPORTS

Gross Tons

Country of destination	Sept., 1927	Jan. through Sept. 1927	1926
N. & Cent. America and W. Indies	86,401	826,505	837,150
Canada and Newfoundland	67,728	632,031	631,360
Cuba	8,219	72,983	65,525
Mexico	5,472	64,073	80,973
Guatemala	252	5,356	8,847
Salvador	110	3,293	12,353
Panama	1,592	14,993	6,201
British W. Indies	508	10,134	7,313
Other W. Indies	1,394	14,011	12,586
Other Central America	1,126	9,631	11,992
South America	23,295	269,077	260,270
Argentina	7,595	62,637	42,302
Brazil	3,007	54,539	38,388
Chile	4,169	33,038	49,283
Colombia	2,948	43,677	45,888
Peru	1,720	27,078	28,077
Venezuela	2,525	37,293	47,500
Other S. America	1,331	10,815	8,832
Europe	20,511	157,422	102,724
France	258	4,151	7,591
Italy	2,093	39,960	22,708
Rumania	40	1,351	2,324
Russia	101	5,744	2,815
Turkey	18	2,157	2,504
United Kingdom	4,125	53,661	44,273
Other Europe	13,876	50,398	20,509
Far East	35,720	397,989	364,240
Australia	1,171	20,300	19,559
British Malaya	268	6,820	8,275
China	3,925	42,233	27,641
Dutch East Indies	1,808	27,986	26,026
India	1,386	22,269	27,459
Japan and Chosen	17,825	206,827	181,380
Kwangtung	548	16,135	19,463
Philippine Islands	8,529	45,940	45,500
Other Asia and Far Eastern Markets	260	9,479	8,937
Africa	425	13,365	12,693
British S. Africa	229	6,129	6,325
Egypt	117	3,039	4,332
Portuguese East Africa	63	3,380	1,695
Other Africa	16	817	341

DESTINATION OF IRON AND STEEL EXPORTS

Gross Tons

	Rails	Galvanized sheets	Plate not fabricated	Tin, terne plate	Steel sheets, black	Barbed wire	Steel bars	Steel scrap
Argentina	901	717	4	1,634	.....	710	.....	.....
Australia	.....	65	5	.....	157	35	201	.....
Belgium	231	.....	.....	.....	.....	.....	.....	.....
Brazil	960	225	67	144	.....	762	150	.....
British India	.....	330	.....	.....	.....	.....	.....	.....
Canada	1,095	1,752	8,536	2,963	3,346	342	3,875	9,800
Central America	17	547	56	.....	8	311	32	.....
Chile	300	18	50	394	831	.....	.....	.....
China	2,062	85	.....	1,307	.....	.....	31	143
Colombia	40	848	2	194	.....	378	.....	.....
Cuba	1,249	728	102	204	.....	495	324	.....
Dutch East Indies	.....	810	.....	.....	.....	.....	.....	.....
Europe	.....	.....	.....	.....	101	.....	95	.....
Germany	.....	.....	.....	.....	.....	.....	.....	7 123
Italy	.....	.....	.....	62	.....	.....	.....	2,027
Japan including Chosen	2,337	247	.....	4,593	1,929	.....	5	5,932
Kwangtung	467	.....	.....	.....	.....	.....	.....	.....
Mexico	.....	1,156	24	668	107	292	68	131
Norway	.....	75	.....	.....	.....	.....	.....	.....
Other Europe	.....	103	.....	176	.....	.....	.....	.....
Panama	.....	.....	.....	.....	.....	.....	609	.....
Peru	71	.....	67	72	38	.....	160	.....
Philippine Islands	1,684	.....	417	402	149	570	199	.....
Poland	.....	.....	.....	.....	.....	.....	.....	4,558
United Kingdom	.....	.....	.....	.....	190	.....	915	270
Uruguay	311	.....	.....	343	.....	.....	.....	.....
Venezuela	99	.....	.....	138	.....	.....	.....	.....
	11,897	10,451	9,528	13,484	7,189	4,452	7,323	30,084

Exports of Metalworking Machinery

In number except where otherwise specified

	—Sept.— 1927	1926	Jan. through Sept. 1927	1926
Engine lathes	38	18	424	185
Turrent lathes	15	9	198	110
Other lathes	25	48	319	506
Vertical boring mills and chucking machines	1	2	88	64
Thread-cutting and automatic screw machines	47	53	618	637
Knee and column type milling machines	5	17	150	156
Other milling machines	37	13	295	294
Disk type gear-cutting machines	5	....	32	11
Other gear-cutting machines	24	32	265	156
Vertical drilling machines	15	32	195	257
Radial drilling machines	8	6	64	54
Sensitive drilling machines	75	43	414	800
Other drilling machines	27	132	732	1,006
Metal-sawing and cutting-off machines	17	13	210	168
Shapers and slotters	23	33	268	497
Planers	6	1	35	14
External cylindrical grinding machines	66	31	502	390
Internal grinding machines	46	25	332	177
Metalworking tool-sharpening machines	37	45	556	726
Other metal-grinding machines, pounds	70,625	59,074	874,175	544,429
Sheet metalworking machines, pounds	283,843	1,436,398	3,499,341	4,963,135
Plate metalworking machines, pounds	178,129	34,635	783,552	402,485
Rod or wireworking machines, pounds	14,218	33,259	295,618	348,601
Forging machinery, pounds	576,824	377,321	3,310,874	5,128,037
Rolling-mill machinery, pounds	689,896	131,652	5,874,238	3,101,518
Foundry and molding equipment, pounds	581,567	626,825	6,278,193	4,871,433
Other power-driven metalworking machinery and parts, pounds	7,455	469,486	4,441,449	5,873,294
Hand or foot-operated metalworking machinery and parts, pounds	12,868	27,627	193,390	212,810
Pneumatic portable tools	1,227	1,351	14,272	13,442
Other portable metalworking machines, pounds	20,005	25,763	269,504	223,599
Chucks for machine tools	684	662	11,998	15,707
Reamers, cutters, drills, taps, dies and other metalworking tools, pounds	.....	326,787	.....	1,864,925

New Chicago Steel Plant Follows Sales

(*Concluded from Page* 1097)

convenient reach of the industrial track running through the center of the shops. At the front of the plate spacer is the plate bending equipment. On the south side of the punch shop at right angles to the plate equipment are the welding floor and forge shop. The punch shop has 14 cranes ranging from 2 to 5 tons capacity, with single and double hoists. All are electrically operated, and all are controlled from the floor.

Immediately west and adjoining the punch department is the assembling shop which is served by an 80-foot, 20-ton bridge crane with a 5-ton auxiliary. On the south side are four 22-foot jib cranes with 2 and 3-ton air hoists and a 16-foot jib crane with a 5-ton electric hoist. Traveling jib riveter cranes serve the riveting furnaces and riveters on the opposite side of the assembling shop. The reaming work is handled by a gantry reamer which runs through the center of the assembling shop. A conduit and boxes in the floor serve to care for a reel of cable on the reamer supplying current to the four two-horsepower motors serving it. The gantry jib crane is electrically operated. At the end of the building is a milling machine and a radial drill.

Rivet heating is by oil burners and by electric furnace. Oil for both the furnaces and for the heating of the plant offices is furnished through a circulating system, the oil storage being outside the plant buildings in two large underground tanks. All of the oil furnaces are equipped with electric blowers. Riveting of beam work is done in the beam bay of the punch shop, where the assembling work for that class of products is done. The beams thence go directly out into the loading yard on the industrial tracks.

The loading and painting yard at the west end of the assembling shop has an 80-foot crane runway with a 20-ton crane and a 5-ton auxiliary crane. Here material can be loaded directly into cars for shipment, and a driveway for trucks has been laid out for local delivery.

On the roof of the service rooms is the transformer station, in which the electric current, purchased from the Public Service Co. of Northern Illinois, is stepped down and distributed to the individual electric motors.

The spacing tables for the new plant were designed and made at the Mississippi Valley company's Decatur works. The large overhead cranes were furnished by the Harnischfeger Corp., Milwaukee, and the smaller cross-travel cranes by H. D. Conkey & Co., Mendota, Ill. The hoists were purchased from the Box Crane & Hoist Corp., Philadelphia. The beam punch was furnished by the Thomas Spacing Machine Co., Pittsburgh, and the angle and plate punches and shears by the Consolidated Machine Tool Corp. of America, Rochester, N. Y., and Kling Bros. Engineering Works, Chicago. American Car & Foundry Co., New York, and American Hoist & Derrick Co., St. Paul, Minn., supplied the electric rivet heaters, and the riveting machines were furnished by the Hanna Engineering Works, Chicago.

The new plant also will merchandise ornamental metal work of all kinds and all the miscellaneous items of architectural iron, and will carry on the business of jobbing these products. A large stock of structural steel shapes will be carried in mill lengths, besides which will be warehoused such items as steel sash, coal chutes, manhole rings and covers, and the many other metal articles required for all types of buildings.

H. H. Cosley, who has had charge of Chicago sales for a number of years, will continue in charge of this department with the assistance of E. T. Blix, formerly of Decatur. P. W. Armstrong, formerly of Decatur but more recently with the company's St. Louis plant, is to be works manager; and W. A. Stuckey, of Decatur, has been appointed shop superintendent. It is planned that R. D. Wood, general manager of the company, will be located at the Chicago office.

Steel Fabricators Meet at Pinehurst

(*Concluded from Page* 1128)

in devising the formula, which is

$P_t = 21\,000 - 8000d - 5000Ve$

where P_t = permissible tensile stress on rivets

d = diameter of rivet in inches before driving

e = eccentricity of loading on rivet in inches

An innovation in the policy of an industrial organization was introduced in the appearance on the program of Alfred E. Lindau, who as president, American System of Reinforcing, Chicago, represents the producers of a material competitive to steel. Mr. Lindau spoke on "Reinforced Concrete Construction," his address being a straightforward exposition of the merits of reinforced concrete.

"Steel in Bridges" by Dr. Ralph Modjeski, consulting bridge engineer, New York, is in effect a sequel to the notable address "Steel for Strength and Security" delivered at the last annual meeting by George F. Swain. Dr. Modjeski compared the relative merits of steel and reinforced concrete for bridges.

He also commented on the use of alloy steel for construction and stated copper bearing steel now is being considered for structural purposes. "We may expect still greater progress in alloy steels," he declared.

The annual banquet held Thursday evening was one of the most notable in the history of the Institute. W. M. Wood presided as toastmaster. O. H. Cheney, vice president, American Exchange Irving Trust Co., New York, delivered an address on the new competition between industries. Truman S. Morgan, president, F. W. Dodge Corp., New York, spoke on stabilizing business and advocated the extension of the markets for structural steel. The remarks of Messrs. Cheney and Morgan will be presented practically in full in next week's issue.

The Friday sessions resolved themselves into a discussion of internal problems of the industry—particularly competition. It was moved, seconded and carried by unanimous vote that the sentiment of the convention is that the one-price policy should be strictly adhered to in those territories in which that policy has been agreed to.

Another resolution aiming at the simplification of structural steel sections was passed at the afternoon sessions. It reads:

"Therefore, be it resolved by the members of the American Institute of Steel Construction in convention assembled that the elimination of many structural steel sections is practical and desirable and the 'hot steel' industry be urged to confer and cooperate with the United States department of commerce in an effort to reduce the number and variety of structural steel sections now being marketed."

Retiring directors were re-elected and John J. Duffin, Duffin Iron Co., Chicago, was elected to a place on the board of directors. A number of important questions dealing with the future activities of the Institute, originally scheduled for discussion Friday, were delegated to the executive committee which is meeting in New York this week.

Industrial films were shown at the Pinehurst theater Wednesday evening by the American Bridge Co., Hanna Engineering Works and E. I. du Pont de Nemours & Co., Inc.

Machinery

Norfolk & Western Railroad Issues Inquiry for Between 60 and 100 Machines—Future Business Appears More Promising

DEMANDS for machine tool and shop equipment appear to have expanded considerably during the past week for sales just closed were better than in any previous week during the month. Inquiries also are materially better. One of the largest in recent months is that of the Norfolk & Western railroad involving between 60 and 100 items. Railroad inquiries in all markets are somewhat better. General manufacturing interests are buying more actively, although individual orders are small. The automotive industry in Detroit and elsewhere is not an important factor in present buying. It is understood, however, that Ford Motor Co. has placed recent business in the East for at least 24 lathes. Inquiries for cranes are more numerous.

New York Nov. 1.—Overshadowing all else in the eastern machine tool market is the formal issuance of a list of 69 machine tools for Norfolk & Western railroad, Roanoke, Va. This list had been known to be under active contemplation for several weeks, with builders submitting tentative figures for estimating purposes. In the main, the machine tool market has a better tone, with several of the larger sellers reporting a better volume inquiries and orders. With only one exception, however, have orders been large, and the market from a purely local standpoint has shown little change. Included in the Norfolk & Western list are several bolt cutters, four 36-inch planers, two radial drills, a 36 x 42 and 84-inch boring mill, more than 15 grinders of various types, including two cylindrical grinders, a 3-inch forging machine, a 1000-pound air hammer, four turret lathes, an axle lathe, three 20-inch engine lathes, a 42-inch engine lathe, a 36-inch shaper, a forging press and other equipment, including two hoists. The public school commission of Baltimore is inquiring for eight or ten machine tools. Railroad interest is reflected in the purchase of 36-44-inch side-head borer for the Big Four and a lathe for the New York Central. Cincinnati Street railways has closed on a car wheel lathe a 48-inch, 400-ton wheel press, a 48-inch car wheel borer, and a car wheel grinder.

Worcester, Mass., Nov. 1.—Machine tool buying appears to have taken a new lease with several fair-sized lists placed and inquired for this week. The machine shop trade, textile makers and bench tool users were in the market and placed good orders. A feature is the intense competition between machine builders which in some cases is shaving profits rather closely. Sales this week included a radial drill to a Connecticut account, three milling machines to the middle west and 24 probable. While unconfirmed, it is said that a large paper making firm is in the market for some new machinery which is likely to be placed this week. Several automobile companies also are understood to be considering new equipment.

Pittsburgh, Nov. 1.—Equipment sellers are more encouraged this week than they have been in several months. The market has more of a semblance of activity than has been discernable for some time past. The main happening is the issuance of a list by Norfolk & Western railroad involving in excess of 100 items, including 14 grinders of three or four sizes; seven lathes, and other general machine shop equipment for Norfolk, Bluefield and Roanoke, Va., shops. Several dealers report their salesmen developing numerous inquiries involving one to six machines, and this leads them to expect an upturn. Youngstown Sheet & Tube Co. also is in the market for some equipment, including a large special thread milling machine for particularly accurate work. While Westinghouse Electric & Mfg. Co. has not as yet placed orders against its list, Sharon Steel Hoop Co. has started. It purchased two grinders, one lathe and a radial drill, but defers action on the bigger machines as well as on five cranes. Several crane inquiries developed this week involving one, two or four each, but as yet these remain unidentified.

Cleveland, Nov. 1.—Some improvement in sales was noted in this territory last week and October business exceeded September by a good margin, in some cases as much as 20 to 25 per cent. Individual orders are small in size but they are numerous. Inquiries, likewise, are developing more rapidly. Used machinery is in good demand. Except for some Ford business which has been placed in the East, there is little activity originating in the Detroit automotive field.

Chicago, Nov. 1.—Sales of machine tools are growing slightly in volume in this district, but are represented in single-item orders for the most part. Inquiries likewise are for scattered requirements. Chicago, Milwaukee & St. Paul is inquiring for an 80-inch driving wheel lathe for its Kansas City shops, an alligator shear, and one or two other machines. Rock Island also is inquiring for several tools. Some of the farm implement manufacturers in this territory have been more active in the market. International Harvester Co. is inquiring for a shaper and several special tools. A. O. Smith Corp., Milwaukee, is closing on some special pipe machinery. Reports are that the recent reductions in prices by manufacturers of shapers approximates 10 per cent. It is understood that builders of lathes and milling machines are endeavoring to stiffen quotations. The used tool market continues fairly active.

CRANE ORDERS PLACED

Three 5-ton handpower cranes for state barge canal, Syracuse, N. Y., to New Jersey Foundry & Machine Co.

Among single orders were: 15-ton electric crane for Central of Vermont railroad, to Niles Crane Corp.; 100-ton electric crane with 10-ton auxiliary for Philadelphia Electric Co., for installation at Lamokin, Pa., to Niles Crane Corp.; 25-ton locomotive crane for Ohio Quarries Co., Amherst, O., to unnamed builder; special electric locomotive crane for Stevens & Wood Co., New York, for shipment to Toronto, O., to Industrial Brown Hoist Corp.; used locomotive crane for Fletcher Quarries, Lowell, Mass., to unnamed seller.

CRANE ORDERS PENDING

Thirteen electric overhead cranes, estimated to cost around $175,000, inquiry issued by an eastern company for bids. This company closed on several cranes possibly 60 or 90 days ago.

Five cranes, including two 10-ton for coil strip storage, one 10-ton and one 7½-ton for pickling department, and one 35-ton for annealing department, for Sharon Steel Hoop Co., Sharon, Pa.; pending

Two electric overhead cranes, including one 15-ton and one 10-ton, for Norfolk & Western; action expected shortly.

Two locomotive cranes for Carleton Construction Co., New York; bids asked.

Two electric overhead cranes for Erie railroad, including one 20-ton for shops at Meadville, Pa., and one 15-ton for shops at Hornell, N. Y.; action understood to have been delayed indefinitely.

Among single inquiries were: 15-ton steam and gasoline operated crane for shipment to Panama, inquiry issued through Charles E. Griffin Inc., New York; 12-ton 8-wheel steam locomotive crane for export; bids asked by C. A. Adrianza & Co., New York.

Processed Ore Dutiable, Court Rules

Washington, Nov. 1.—Word has been received here of a ruling of the United States customs court in a protest case brought by the Burrowlite Products Co. that merchandise consisting of processed iron ore, which was produced by roasting the ore, removing the slag and most of the sulphur and grinding the remaining substance, was dutiable at 30 per cent, and not free of duty as iron ore, as claimed by the importer.

Total exports of horseshoes from the United States totaled 169,092 in August.

Shipping More Steel Over Pennsylvania Rivers

Pittsburgh, Nov. 1.—Slight increases in tonnage of iron and steel transported over the Monongahela and Ohio rivers were registered in September over August, but the Allegheny dropped off to 1750 from 3102 tons. Ohio river increased 7791 tons in that period, and the Monongahela gained 744 tons, as shown in the following table:

	Allegheny river	Monongahela river	Ohio river
		In tons	
September	1,750	102,778	98,809
August	3,102	102,034	91,018
July	890	59,676	63,941
June	2,525	31,894	42,220
May	300	41,954	50,130
April	150	37,811	46,750
March	600	36,112	29,016
February	0	29,529	29,211
January, 1927	0	27,900	26,409
December	439	36,854	30,229
November	.....	35,491	38,566
October	30	47,805	29,844
September	451	40,540	26,840
Totals, 1923	1,064	291,689	190,336
Totals, 1924	56,720	266,074	216,138
Totals, 1925	7,479	304,217	365,844
Totals, 1926	2,922	428,741	325,545
Total, 1927, 9 mo.	9,317	469,688	477,504

With September tonnage added, this makes the nine-month total for the Monongahela river 469,688 tons, or a greater tonnage than carried in any one year since the revival of river shipping. The nine-month aggregate for the Ohio river, 477,504 tons, likewise is greater than any 12-month total in the past several years.

The tonnage of all products carried over the Allegheny river in September was 421,985 tons, against 333,279 tons in August. The Monongahela river total for all products, 2,181,251 tons, compares with 2,132,449 for August. The Ohio river total of all products carried, dropped off to 988,410 tons in September from 1,007,373 tons in August.

Protests Sulphate Rate

Washington, Nov. 1.—The Bethlehem Steel Corp. has filed a complaint with the interstate commerce commission against the Atlantic Coast Line in which it requests that reasonable rates be prescribed on sulphate of ammonia between Johnstown, Pa., and South Carolina destinations. It also asks reparation of $1398.

The United States exported 39,490 pounds of woven wire fencing to Mexico in August.

Truck, Tractor Sales Low

Washington, Nov. 1.—Shipments in September of electric industrial trucks and tractors totaled 79 compared with 92 in August and 97 in September, 1926, according to figures compiled by the department of commerce. Further monthly comparisons follow:

	Domestic		
	Tractors	All other types	Exports
1925 Total	192	1,120	128
1926			
September	10	82	5
Total (9 mos.)	136	849	57
October	18	97	17
November	18	86	19
December	18	95	5
1926 Total	190	1,127	98
1927			
January	6	67	17
February	11	120	7
March	10	96	10
April	12	89	4
May	19	77	10
June	20	97	23
July	12	78	5
August	3	*87	2
September	8	66	5
Total (9 mos.)	101	772	83

*Revised.

The United States exported 56 mine hoists and derricks in August, with United Kingdom receiving nine, Venezuela seven and Mexico and France six each.

Industrial Business Changes

NORTON CO., Worcester, Mass., manufacturer of abrasives and grinding machinery, has opened a new office and warehouse building at 5805 Lincoln avenue, Detroit. Offices and stocks have been removed from the former location at 233 West Congress street. The building is 100 x 124 feet, three stories, half the floor space being given over to storage of grinding wheels and abrasives. A demonstration room for grinding is a feature. A freight dock 22 x 120 feet adjoins the plant, with conveyor connection to handle incoming freight.

* * *

Brooker Iron & Steel Corp., Miami, Fla., has changed its name to Southern Steel Corp.

* * *

Acme Wire & Iron Works, Detroit, has removed its factory from Canfield avenue to a new location at 12340 Cloverdale avenue. The concern has carried on its business in the old plant for more than 25 years.

* * *

King Pneumatic Tool Co., Chicago, has moved its plant to 2717 North Ashland avenue.

* * *

Brown Instrument Co., Philadelphia, manufacturer of pyrom eters and recording instruments, has opened a branch at 509 Mutual building, Kansas City, Mo., in charge of F. M. Poole.

* * *

Definite announcement is expected shortly as to the proposed merger of the Underwood Typwriter Co., New York, and the Elliott-Fisher Co., New York, manufacturer of office appliances.

* * *

Gerrard Wire Tying Machines Co., Chicago, and the Ti-It Machines Co., San Francisco, manufacturers of machinery for making shipping packages, have been merged into one concern, under the name of the Gerrard Co., Inc. The southeastern branches of the two companies at Atlanta, Ga., have been united at the location of the Gerrard company's branch, 619 Spring street, in charge of B. H. Bond.

* * *

C. F. Church Mfg. Co., Holyoke, Mass., has bought the business of the B. O. T. Mfg. Co., Trenton, N. J., and will operate it as a subsidiary. The companies produce sanitary ware and bathroom specialties.

* * *

Consolidated Radio Corp., recently formed, has merged the Precision Products Co., Ann Arbor, Mich., and Wells, Gardner & Co., Chicago, both manufacturers of radio equipment. Both plants will be expanded.

* * *

Valley Motor Truck Co. Inc., Elkhart, Ind., has bought part of the plant of the Noyes Carriage Co., which it will equip for truck production. Operations are expected to start by mid-November.

News of Societies

THE American Society of Mechanical Engineers has announced the program for its annual meeting which is to be held at the Engineering Societies building, New York, Dec. 5-8. The council and local sections delegates will hold meetings both Monday morning and afternoon. Simultaneous sessions will be held on four days beginning Tuesday. Features of the week's program are an open house on Monday evening, the presidential address and reception on Tuesday evening, the annual dinner on Wednesday evening and the Henry Robinson Towne lecture on Thursday afternoon.

Included in the program are the following sessions:

Monday, Dec. 5

EVENING

Open house.

Tuesday, Dec. 6

MORNING

Machine Shop Practice

"Characteristics of Hydraulic Feed and Drive for Cutting Tools," by Walter Ferris.
"Hydraulics and Modern Machine Tool Design," by Waldo J. Guild.
"The Development of Hydraulic Feeds on Multiple Drilling Machines," by R. M. Galloway.
"Hydraulic Feeding Mechanism for Milling Machines," by S. Einstein and H. Ernst.

GENERAL

"The Steel Wool Industry," by Crosby Field.

AFTERNOON

Machine Shop Practice

Maintenance of Machine Equipment," by William Hartman.
"Plant Maintenance and Return on Capital Investment," by W. H. Chapman.
"Maintenance of Shop Equipment," papers by J. R. Weaver and C. S. Gotwals.
"Plant Maintenance," by G. H. Ashman.

GENERAL

Address: "What the National Engineering Societies Can Do for Engineering Education," by W. E. Wickenden.

EVENING

Presidential address and reception.
Award of Melville Medal to L. P. Alford.

Wednesday, Dec. 7

MORNING

Fuels

"The K. S. G. Process of Low-Temperature Carbonization," by Walter Runge.

Machine Shop Practice

"Development of Machine Tools from a Users' Viewpoint," by F. C. Spencer.

Materials Handling

"Materials Handling as an Aid to Production," by Frank L. Eidmann.
"Costs of Operation and Savings Effected by Electric Industrial Trucks and Tractors," by C. B. Crockett and H. J. Payne.

Photography

"Present Applications of Photography in Mechanical Engineering," by C. E. K. Mees.
"Photomicrography and Its Application to Mechanical Engineering," by F. F. Lucas.
"X-Ray Photography and Its Application to Mechanical Engineering," by W. P. Davey.

AFTERNOON

Annual business meeting.
Education and Training for the Industries
"Apprentice Training for Draftsmen," by C. J. Freund.
"Principles of Apprenticeship Organization," by Ben S. Moffat.

EVENING

Annual dinner.

Thursday, Dec. 8

MORNING

Management

"Control of Factory Overhead," by H. G. Perkins.
"Production Control in a Wrought Brass Mill," by W. R. Clark and Arthur Brewer.

AFTERNOON

Management

"Budgetary Control," papers by J. P. Jordan and H. V. Coes.

Henry Robinson Towne Lecture

"The Relationship Between Industry and Taxation—An Economist's Views of a Sound Program for American Business in the Field of Taxation," by Prof. T. S. Adams.

* * *

Construction Leaders To Meet

The sixth annual convention of the American Construction council will be held at the Hotel Statler, St. Louis, Dec. 1-3, according to a recent announcement. The organization embraces representatives of all component parts of the construction industry and speaks impartially as a whole on problems affecting the national prosperity. Dwight L. Hoopingar, 28 West Forty-fourth street, New York, is executive.

* * *

Arrange Third Power Conference

Plans now are being made for the third Midwest Power Conference which is to be held in Chicago, Feb. 14-17. As in the past two years, the conference is sponsored by nine technical societies. The program will include seven sessions, a banquet and one afternoon devoted to inspection trips. Concurrently with the conference a power show will be held at the Coliseum. G. E. Pfisterer, 53 West Jackson boulevard, is the secretary.

* * *

Ceramic Engineers To Go Abroad

The American Ceramic society is planning a ceramic tour abroad from May 19 to July 5, 1928. The party will depart from Montreal as a unit and will be convened as a unit at specific times for one-day sessions with ceramic associations in London, Berlin, Prague and Paris. At all other times, the party will split into groups as they shall wish for visiting mines, plants, markets, or places of scenic and historic interest. The tour is not exclusively American, others may join the party for any portion of the trip.

* * *

Personnel Problems Is Topic

A research conference, dealing with human factors in industry, will be held at the Hotel Pennsylvania, Nov. 17-18, under auspices of the Personnel Research Federation Inc. An effort will be made to promote scientific investigation along the lines of: Research in susceptibility to accidents and accident reduction, discovery and measurement of mechanical abilities, study and measurement of leadership and the personal interview; its technique and reliability and fact-finding.

Among papers to be presented are "Tests for Executives, Salesmen and Engineers," by Johnson O'Connor, General Electric Co., and "Recent Developments in Industrial Psychology in Europe," by Col. Walter V. Bingham, director of the Research federation.

* * *

Preparing for Sixth Power Show

More than 500 manufacturers of power equipment and machinery will be represented at the sixth annual power show, which is to be held in the Grand Central Palace, New York, during the week of Dec. 5-10. The exposition this year will include a wider variety than at any of the former expositions. Machinery for power generation, for heating and ventilating, for measuring and recording of pressure and volume, and a full line of power transmission equipment will be included.

Convention Calendar

Nov. 1-3—American Management association. Autumn meeting at Palmer House, Chicago. W. J. Donald, 20 Vesey street, New York, is managing director.

Nov. 2-4—American Institute of Mining and Metallurgical Engineers. Open-hearth committee meeting at Hotel Statler, Detroit. Dr. H. Foster Bain, 29 West Thirty-ninth street, New York, is secretary.

Nov. 10—American Society of Mechanical Engineers. First meeting of iron and steel division at Hotel Ohio, Youngstown, O. Calvin W. Rice, 29 West Thirty-ninth street, New York, is secretary.

Nov. 16-17—National Founders association. Convention at Hotel Astor, New York. J. M. Taylor, 39 South LaSalle street, Chicago, is secretary.

Nov. 17-18—Personnel Research Federation. Conference at Hotel Pennsylvania, New York. Col. Walter V. Bingham, 40 West Fortieth street, New York, is director.

Truscon Enlarges Plant

Truscon Steel Co. will enlarge its sash and steel window departments at the Albert street works, at Youngstown, O. The new fabricating plant at Los Angeles, with a capacity of about 2000 tons a month, has started operations.

Here and There in Industry

Live Information Which Records the Expansion of Various Lines of Productive Enterprise

CHAIN BELT CO., Milwaukee, has bought the mortar and plaster mixer business of the Atlas Engineering Co., Milwaukee. This is the second manufacturing business bought by this company in the present year, the Stearns Conveyor Co., Cleveland, being taken over about 11 months ago. The Atlas Engineering Co. was organized about 16 years ago and has made much progress in the manufacture of mixers. Chain Belt Co. was formed in 1891 as a chain manufacturer. Engineering and conveying lines were added and in 1907 the manufacture of concrete mixers was added. The company has two plants in Milwaukee and one at Cleveland. It has a tract of 59 acres at West Milwaukee which is being developed for manufacture of its new lines. The engineering and concrete mixer buildings and malleable iron foundry have been built there.

Chain Belt Co. has four other companies affiliated, the Federal Malleable Co., Sivyer Steel Casting Co., Interstate Drop Forge Co., all of Milwaukee, and the Nugent Steel Castings Co., Chicago .

* * *

KEARNEY & TRECKER CORP., Milwaukee, has let a contract for an addition 75 x 176 feet. This is to provide additional capacity and avoid necessity for night work. Some new equipment has been bought for the addition.

* * *

MALLEABLE IRON RANGE CO., Beaver Dam, Wis., has increased capital from $1,000,000 to $2,000,000 for present and future enlargement of its works and equipment. F. W. Rogers is president and general manager.

* * *

FARMERS SALVAGE CO., Bennettsville, S. C., C. S. McCall manager, is building its first plant in that city. The company plans to establish plants in southeastern states, with foundry and machine shop, for rebuilding farm machinery and implements.

* * *

GOODWIN CAR & MFG. CO., Chicago, has sold to the Clearing industrial district 25 acres adjoining its present holdings, which will be used for an extension of the district. It will be developed uniformly with the remainder of the industrial area.

* * *

AMERICAN RADIATOR CO. has acquired the properties of the Kewanee Boiler Co., Kewanee, Ill., founded in 1892. A $200,000 addition will be built. The plant will continue to manufacture boilers and heating apparatus under the old name. E. E. Baker will continue as president, B. F. Baker as vice president, and other officers and directors will be unchanged.

* * *

VALLEY MOTOR TRUCK, INC., Elkhart, Ind., Louis Poncher president, has bought part of the plant of the Noyes Carriage Co. and is moving into the newly-acquired property. The company will install new machinery and expects to be in full operation in the new plant by the middle of November. The new building is modern, has 100,000 square feet of floor space and is equipped with a sprinkler system.

* * *

LEROI CO., West Allis, Milwaukee, maker of gasoline engines, self-contained electric plants, etc., has increased its capital from $700,000 to $1,500,000. For the past six to eight months the concern has been erecting several large buildings and installing much new equipment. The improvement was started shortly after it purchased the business of the Beaver Mfg. Co., Milwaukee, a pioneer builder of automobile, truck and other heavy duty engines.

* * *

SUNLIGHT ELECTRIC MFG. CO., Warren, O., has been bought by Glenn P. Cowan, Detroit, and will be linked with others of his interests. The company manufactures split-phase motors and is one of the large producers of this device. It has capacity for 500 motors per day. Management will not be changed. J. B. Estabrook is president, and F. S. Kingston is vice president in charge of production. Glenn P. Cowan, H. A. Tremaine, G. P. Gilman, and Thomas H. Jones are other members of the board of directors. Byers Machine Co., Ravenna, O., was bought by Mr. Cowan and associates early in the year.

* * *

NATIONAL ACME CO., Cleveland, has created a new division by taking over the Positive Filling Machine Co., formerly of Philadelphia. D. S. Patterson, formerly president of the acquired company, is head of the new division. Its product is a line of centrifugal separators, clarifiers and positive filling machines for liquid products. Operations have been started at the plant of the National Acme Co., Cleveland, where 45,000 square feet of floor space has been equipped for production.

Malleable Castings Output Low in September

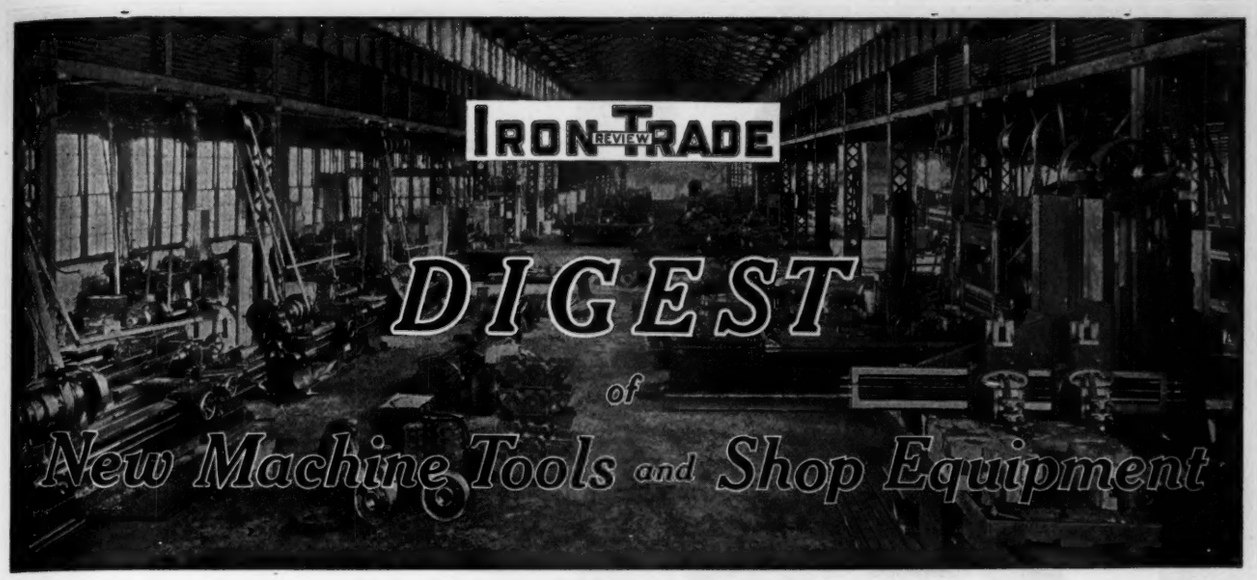
Washington, Nov. 1.—Malleable castings production in September totaled 45,210 tons compared with 51,394 tons in August and 58,376 tons in September, 1926, figures compiled by the department of commerce show. Shipments and new orders also declined. Operations in September were at 43.3 per cent of capacity. Further monthly comparisons follow:

	Total tons produced	Per cent of capacity	Total tons booked	Monthly capacity
Total 1925	737,532	54.4	653,233	1,355,315
1926				
September	58,376	53.7	47,130	**108,627
Total (9 mos.)	562,389	56.9	482,115	988,235
October	57,175	52.6	45,490	**108,638
November	45,793	42.7	40,294	**107,185
December	50,017	48.2	40,051	103,831
Total 1926	*715,384	*54.7	607,949	1,307,889
1927				
January	*51,492	48.8	50,994	105,619
February	*57,380	54.8	58,039	104,686
March	66,372	62.2	53,597	106,698
April	59,225	55.8	56,326	106,163
May	57,655	54.1	49,482	106,478
June	58,972	55.3	46,178	106,736
July	48,202	43.9	45,782	104,287
August	51,394	48.6	42,515	105,717
September	45,210	43.3	37,912	104,401
Total (9 mos.)	495,902	52.2	440,825	950,780

*Revised.

**Capacity since May has been based on following formula: "Total number of units of molding floor space, times average production per molder per day per unit of floor space, times number of actual working days per month."

Sheet metalworking machines exported from the United States in August totaled 758,620 pounds.



Tool Service Demands Grow Heavy

JUST how much engineering service a machine tool manufacturer shall provide the customer without making a charge is a question of long standing. It provokes a discussion whenever tool builders meet, but thus far the industry has taken no definite action to govern this service. At the twenty-sixth annual meeting of the National Machine Tool Builders' association at Lennox, Mass., Oct. 10-13, the subject was given close attention in the presidential report of James E. Gleason.

Buyers and users of machine tools likewise are interested in this question and would be affected by any action which tool builders as a whole or individually might take. It is for their benefit, therefore, that the following remarks of Mr. Gleason are quoted:

"Specification of machine tools to fill the definite demand which has arisen from them has compelled the manufacturer to expand greatly his designing and production staffs. We see a tendency to concentrate in one establishment complete engineering and production knowledge of various types of machines in one art, such as turning, drilling, grinding, etc. It seems no longer possible to stick to a limited number of machines.

Much Service Is Demanded

"With the development of this special machinery has come a vastly increased demand on the part of our customers for engineering service. Sometimes a machine has been entirely redesigned to fit the needs of a single large producer. In such cases the advantages of the machine have to be fully demonstrated to the supervisory organization, and more or less extended instruction given the machine operators. And if a problem arises at any time in regard to the work, the machine builder is called upon to send a man from the factory to help solve it, even to the extent of investigating shop methods and processes entirely beyond the functions of the machine itself.

"So long as this engineering service does not pass reasonable bounds it may be given free of charge. If a concern spent a very large sum of money on special broadsides or erected signs boosting its product, who would be willing to say that it was acting against the general good, or contrary to sound business policy? Free engineering service is directly analogous. It is given to advertise the seller—to create good will—to make closer contact with the user and so retain his business. The management of each individual concern must determine for itself how much money it will spend in such free engineering service, just as it has to decide what amount it will spend in any other form of advertising.

Specialized Knowledge Needed

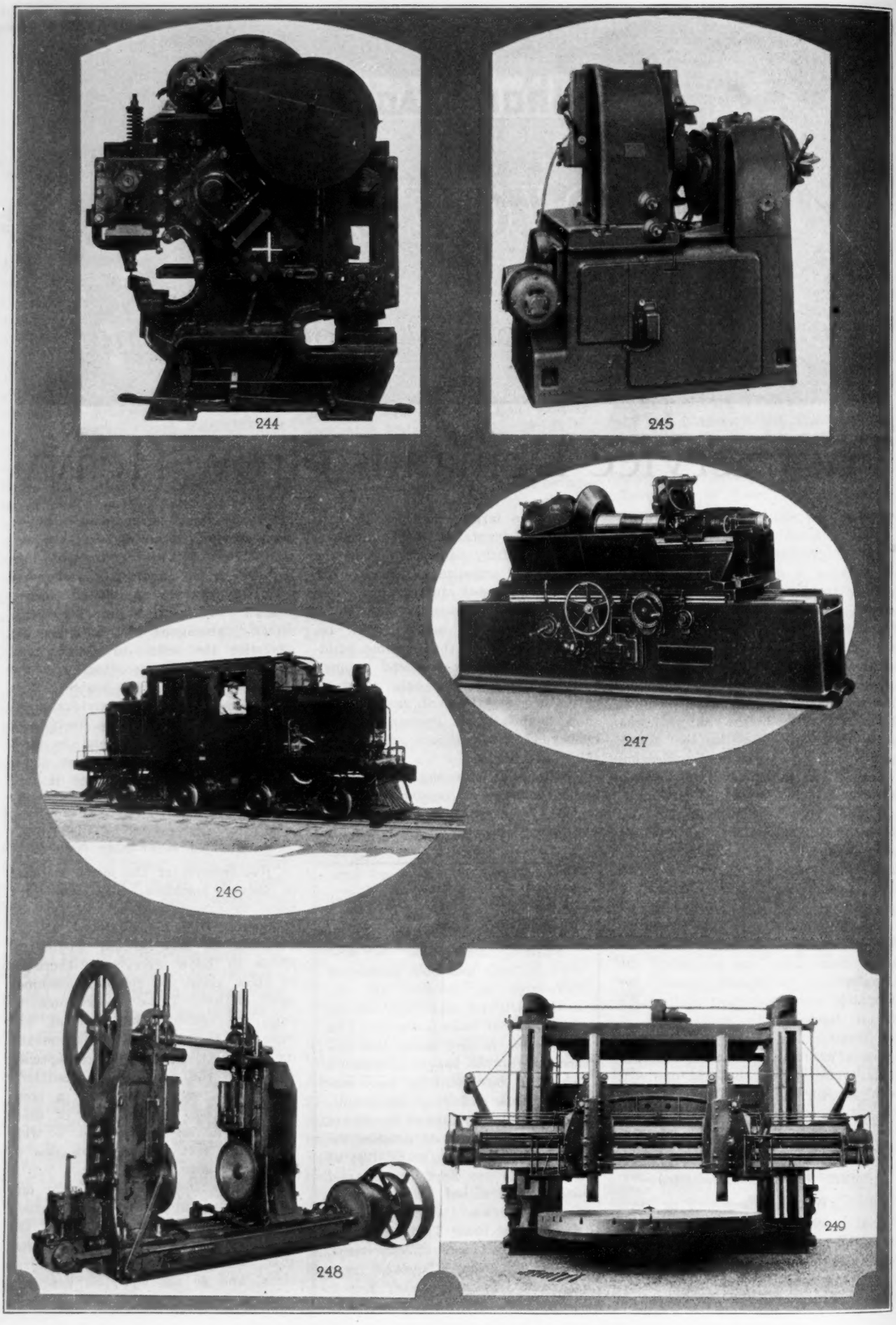
"But because of the large increase in special machines, customers have come to expect help on very special problems. It is difficult even for the best service men in our customers' shops to know everything there is to know about the complex machines now in use. These have come to rely, for recommendations that will best fit their special requirements, on engineers and production specialists from the machine tool builder's staff, men who have made a comparative study of the uses of their machine in its relation to a wide variety of methods and processes in different plants.

"Our customers realize that due to our opportunity for special study we must know more about all the little peculiarities of our machines than men can in their own organizations, and so are equipped not only

(*Continued on Page* 1148)

Write for Information

IN THIS issue of IRON TRADE REVIEW, *descriptions of new machine tools and shop equipment introduced in October are described without any reference to the names of manufacturers. The equipment is announced and described for the benefit of readers who are interested in new machine tools and shop equipment. Names and addresses of the manufacturers, as well as detailed information regarding each item of equipment, are kept on file and will be furnished upon request. Communications should be addressed to* IRON TRADE REVIEW, *New Equipment Department, Penton building, Cleveland.*



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Many Shapes Handled by Punch and Shear

No. 244

Numerous features are embodied in a combination punching and shearing machine recently placed on the market. The main shaft operates in three bearings. The triple gag attachment, which permits punching three sizes of holes at various gages with one setup, is interchangeable. The construction permits changing the distances from the face of the block to the center of the die without removing the die blocks. An internal attachment is provided for rectangular and 45-degree notches, a feature that combines safety and saves overall space. Punching, splitting, and angle cutting units are operated individually by four jaw clutches. The latter run in oil. The flywheel shaft is lubricated automatically, the oil being strained before entering the bearings. The machine has capacity for punching I-beams from 4 to 15 inches, columns from 4 to 8 inches, and a 1 1/16-inch hole in a ⅝-inch plate. It will notch 6-inch I-beams, 8-inch channels and 2 x 2¼-inch angles. It will shear tees and angles 4 x 4½-inch square off, 6-inch I-beams and 9-inch channels. It will split plates rolled of ⅝-inch material.

New Gear Generator Has Automatic Stop

No. 245

Spiral bevel gears up to 10-inch pitch diameter now can be cut on a production basis with a single purpose machine recently designed. The generating motion is obtained by a crown gear and segment. The unit carrying the cutter is mounted on an upright and to clear the cutter while the blank is indexing it is given a lateral movement. The spindle carrying the cutter is mounted on ball bearings and requires few adjustments. Many moving parts are eliminated by the use of three motors. An automatic stop, which operates the motors for the cutter, feed and generating motions stop the machine when the gear it is cutting is completed and permits an operator to handle several machines. The machine occupies a space of 5 feet 7 inches x 3 feet 10 inches and can be arranged in battery formation by using spacers to join them together. The machine is designed so that one or two work carrying heads may be supplied, one for gears of greater pitch angles than 63 degrees 26 minutes and the other for pinions of pitch angles less than 26 degrees 34 minutes.

Gas-Electric Locomotive Affords Flexibility

No. 246

Equipment used in the construction of a newly designed 20-ton double truck gas-electric industrial locomotive is of the most modern including shutters on the radiators for extreme weather conditions; snow plow; special arrangement of cab with its lighting, ventilating and hot-water heating systems; air sanders; straight and automatic air brakes; power take-off for direct current up to 240 volts for lighting, heating, cooking, operating electric motors, windlass, pumps, etc. The locomotive is designed to maintain a schedule of 25 miles an hour over heavy grades and at temperatures varying from 47 degrees Fahr. below zero to 110 degrees above. Because of the heavy-duty, over-size standard motors no abnormal voltage can develop. Over-size equalized brakes are installed. Semielliptic springs, which are self adjusting for all varying track conditions, are employed, a cross equalizer giving a 3-point suspension. The engines are supported on massive frames which absorb the shock when running over rough tracks.

Grinder Has Force Feed Lubricating System

No. 247

A special grinder has been constructed to obtain a good finish and to impart an accurate surface to large machine tool spindles. The machine will grind work 48 inches long. While the normal swing of the machine is 16 inches it will swing work 31 inches diameter through the gap of the table. One of the features contributing to the accuracy obtained on this machine is the massive wheel slide the complete assembly of which weighs 1600 pounds. This weight and the downward pull of the drive holds the wheel slide down on the ways under the heaviest cutting condition. The grinding wheel is rope driven by a 20-horsepower motor. The wheel spindle is mounted in half bearings of special bronze. End thrust on the spindle is taken up by a double row of ball bearings. This type of mounting withstands the heavy loads, is free from chatter and needs no adjustment. One of the distinct features is the forced lubrication used for the tableway. The machine carries a 26-inch diameter wheel with a 4-inch face. Cast-iron parts are ground to a 0.0002-inch limit for roundness and accuracy.

Seaming Machine Built for Light Work

No. 248

A light and rapid machine for double seaming the ends of light steel containers embodying the latest improvements in design now is available. The machine in addition to seaming grease drums handles the double seaming of 55-gallon one-time shipping containers. The seamer is of the horizontal type and seams both ends of the drum simultaneously. Three controlling levers are within easy reach of the operator, making it possible to turn out about 300 small diameter packages an hour. The one-time shipping containers can be double seamed at the rate of 125 an hour. It is built either for line-shaft or motor drive, requiring 25 horsepower for operation. The main spindles carrying the chucks are mounted on large roller bearings. Individual first and second operation seaming rolls also operate on roller bearings. The motion of the right hand column, which clamps the drum, and the motion of the cams are controlled by special clutches. The rotation of the seaming chucks is operated through a large spindle single-disk clutch. All moving parts are readily accessible for inspection.

Boring and Turning Mill Has Many Features

No. 249

A 20-foot boring and turning mill with the right hand housing built of considerably heavier proportions than the left hand housing and a wide housing face provided with a 3-track bearing to receive a side head is of recent development. Both saddle and bar feed for either head may be engaged simultaneous for the purpose of cutting tapers, and in conjunction with the swiveling of the saddles, tapers may be cut which are not obtainable by the sole use of the down feed combined with the swiveling of the saddles. The machine is driven by a 50-horsepower motor; a 20-horsepower motor is employed to elevate the crossrail. The rail is clamped to the housing by four electric clamping devices, two for each housing, the rail being held inside and outside the housing. High torque ½-horsepower motors operating through a worm and segment are used for these functions. Clamping nuts are connected to these parts by cranks and levers. Four clamping bolts are provided for each housing.

Power Press Brake Is of Strong Construction

No. 250

A recently announced open-throat press brake features steel construction to give a minimum of deflection on main members. The housing, slide and base are made from annealed steel castings. The clutch is a multiple-disk design and operates dry, very low pressures being required. Tapered roller bearings are used on the flywheel, which is sufficiently heavy to prevent overloading of the motor. All gears are steel with accurately cut teeth and the camshafts are hammered steel forgings with the cams made integral and of generous proportions. The slide is adjusted by a small motor mounted on the rear of the slide and through roller chain and worm gearing.

Flexible Arc Feature of Electric Welder

No. 251

Announcement is made of a direct-current arc welder operated by a 3-phase alternating-current motor with both the generator and motor mounted on the same shaft to require only two bearings. A feature of the machine is its unique arc which is flexible. It not only possesses unusual stability but responds instantaneously to changes in arc length, for instance, it is said to be possible to increase the length ½-inch without extinguishing it. The flexibility has been obtained because all auxiliary apparatus has been eliminated. There is no external stabilizer, no field rheostat and no separate exciter. Control is obtained by a simple brush shifting device which provides currents between 50 and 300 amperes.

Introduces Machine for Sharpening Reamers

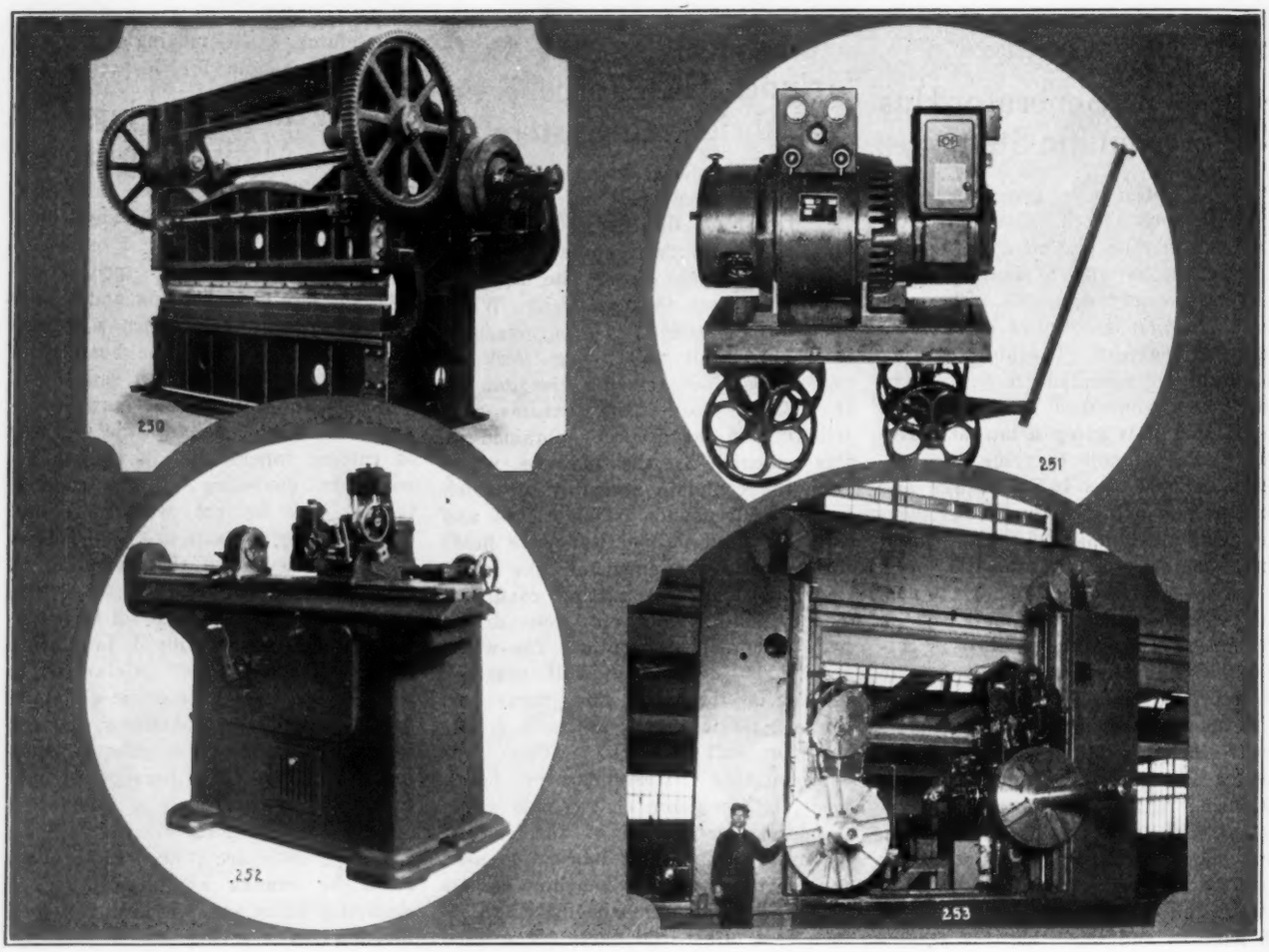
No. 252

A new machine for sharpening reamers is one of the newer pieces of equipment on the market and with its use stoning the cutting edges is eliminated. The machine consists of a headstock which drives the reamer, a tailstock a main platen, an auxiliary platen and a grinding wheel. Two slides are provided, one to permit the grinding of back taper as required and the other to vary the length of bevel on the end of the reamer while grinding and without changing of clearances or form of nose. The grinding wheel used is 4 inches diameter of the straight cup type and is balanced carefully and trued to avoid vibration. A 2-horsepower motor supplies power for operation. It is set on a subplate and drives an extended shaft carrying the drive pulley for the wheel spindle, clutch and worm drive shaft.

Builds Boring Mill of Unusual Proportions

No. 253

A manufacturer of heavy equipment recently has completed an unusually large special horizontal boring machine. While designed particularly for performing boring operations on cast steel locomotive frames having the cylinders cast integral with the frame, it is adaptable to a wide range of boring and drilling operations on large work. The machine has a long bed on which two columns are mounted, each column carrying a saddle with necessary mechanism for driving, feeding and rapid traversing its spindle. The left-hand spindle is arranged to swivel up to 15 degrees from the horizontal. Saddles are equipped with operators' platforms from which all movements of the saddle and spindle are controllable.



Optical Pyrometer Made Simple in Design

No. 254

For cases where the total radiation type of pyrometer can not be used advantageously, a new simplified optical pyrometer has been developed. This instrument is compact, light-weight and is easy to operate. It is entirely self-contained. It is useful in determining the temperatures of small glowing bodies not inclosed and not having the characteristics of a black body, and the temperatures of pouring metal. Special ranges for very high temperatures can be provided. The instrument weighs 3 pounds and is conveniently carried in a leather case.

Chain Sprocket Features Renewable Teeth

No. 255

To reduce the cost of maintenance of sprockets in chain drives, a manufacturer has on the market a sprocket featuring renewable teeth. The body is of cast steel while the teeth are made of a strong wear-resisting alloy steel. The bolt expands the circular base of the teeth which makes them practically an integral part of the body. Replacing teeth is done quickly and without the necessity of removing the chain. These sprockets are made for large chains having a pitch greater than 3 inches.

Device Indicates Relative Hardness of Metals

No. 256

Interchangeable faces are provided on a recently developed bench machine for turning, wiring or burring in the sheet metal, tin or school shop. The frame is made on one-piece material; bearings for the lower shaft are in solid metal of frame. Machine-cut connecting gears are completely enclosed. Faces are of high-grade steel and polished. A fine screw adjustment is provided with a locking nut. The upper face and shaft can be adjusted laterally for variation in the thickness of the material.

Machine Equipped with Changeable Faces

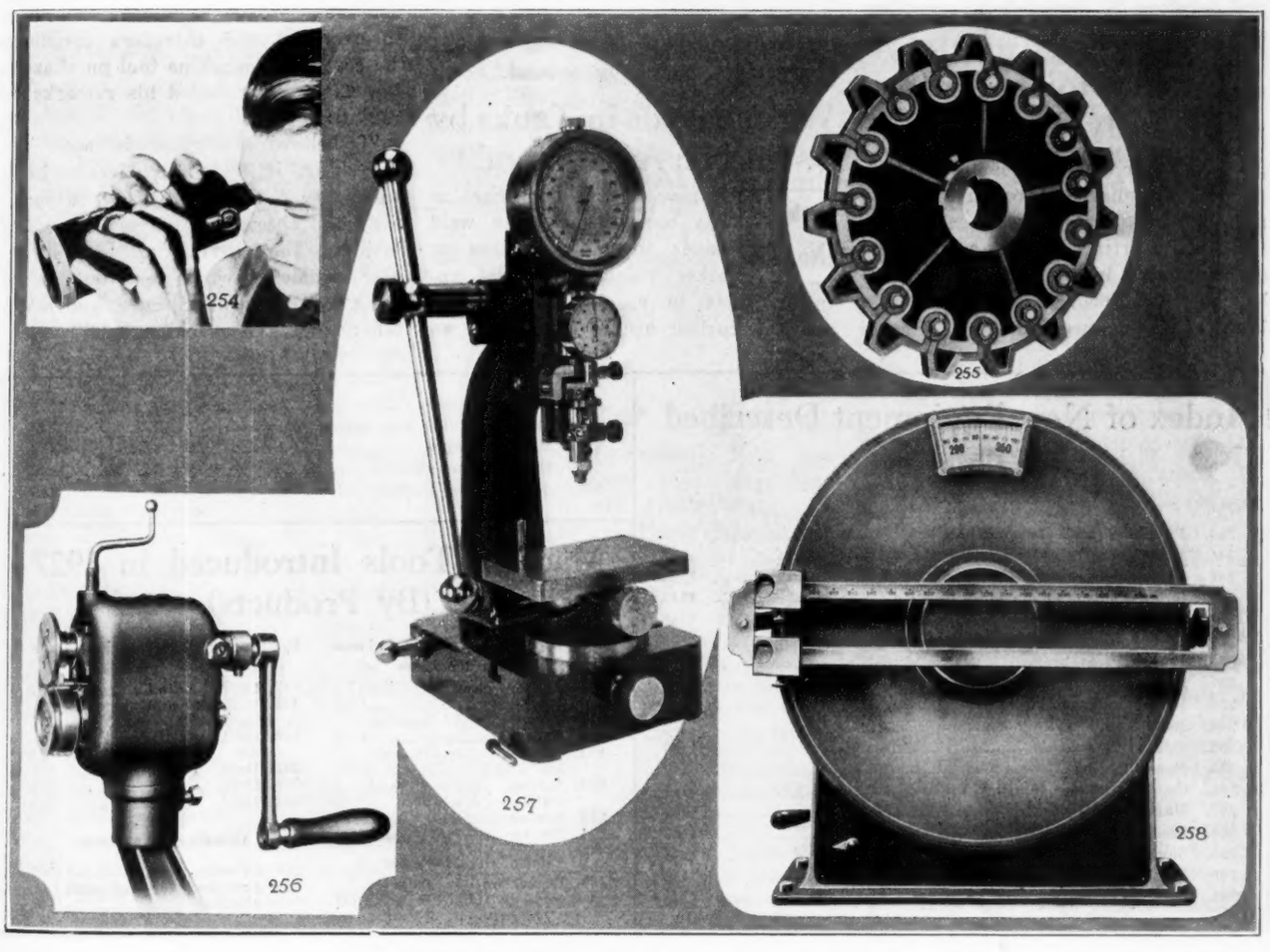
No. 257

An indicator for measuring the quantitative and qualitative hardness in metals and other materials is of recent development. The instrument is a static mechanical pressure machine acting on a small diamond ball impressor through a specially designed high-duty weigher or pressure scale. The depth of impression under load is measured by a micrometer gage. A compensating device on the indicator serves to correct errors due to the contraction of the parts in the machine and the diamond when under strains. Special scales may be applied to the instrument to read in terms of scleroscope and brinell hardness numbers or unit stress values may be used.

Heavy-Duty Dial Scale Affords Accuracy

No. 258

A new type electric dial scale incorporates the principle of a chemist's laboratory scale with an electrically-operated poise shift which automatically strikes a balance. An accuracy within 1/70 of 1 per cent can be obtained. Its accuracy is based on the fact that the load on the platform does not do the work of turning the mechanism. The scale is adaptable to any type of heavy-duty beam scale and makes it possible to weigh up to 200 loads an hour. Construction is extremely rugged.



Circular Sawing Machine Is Semiautomatic

No. 259

A semiautomatic general purpose sawing machine has been developed for sawing copper, bronze and brass bars up to 8 x ¾-inches and tubes and extruded shapes up to 4 inches diameter. The saw blade is circular and is operated by a foot treadle.

Redesigned Hoists Have Greater Head Room

No. 260

A hoist manufacturer has added to his line a new series of hoists which features exceptionally high hook lift. The unit is compact, of rigid construction, is really accessible and efficient in operation. This hoist is for use where ceilings are low.

Diesel Locomotive Uses Sliding Gear Drive

No. 261

An industrial locomotive just announced is believed to be the first diesel-powered gear-driven unit built in America. Cost of power is the principal reason for this form of power. The engine is of the full-diesel type and develops 77 horsepower. Starting is by compressed air.

Electric Hoist Motors Totally Inclosed

No. 262

For electric hoists and other applications requiring intermittent operation and high starting torque, a new line of completely inclosed electric motors has been designed. Sizes range from 1 to 11 horsepower and for various voltages. Provision is made for mounting a brake.

Machine Handles Boring Drilling and Milling

No. 263

A planer-type horizontal boring, drilling and milling machine recently developed offers the precision of a well-built table type machine and has the range of a floor-type. The table has a working surface 168 x 52 inches, and is supported its full length.

Fireproof Windows Made from Sheet Steel

No. 264

A line of fireproof metal windows recently has been placed on the market, 24-gage galvanized steel sheets being used in the manufacture. Standard types include pivoted, hinged, stationary, double-hung, and counterbalanced models.

Hand Shear Is Driven by Electric Motor

No. 265

For cutting sheet material up to 18 gage, an electric-driven shear has been brought out. The unit weighs 6½ pounds and has a ⅛-horsepower universal motor. Speed of cutting will average 15 feet per minute on 18-gage. Blades are interchangeable and easily ground.

Welds Heads in Tanks by Carbon Arc Method

No. 266

A new arc welding machine has been designed to weld heads in range boilers or other small cylindrical rotating table in an inclined position and the carbon arc is carried on an adjustable arm. No filler metal is required.

Tool Service Demands Are Growing Heavy

(*Continued from Page* 1143)

to give the best advice in regard to what jigs and fixtures are necessary but actually to design them more efficiently and economically.

"The tool builder cannot ignore and should not want to avoid these requests for engineering assistance. He should welcome them and build up an organization that will adequately satisfy this call from his customers. He cannot, however, disregard the cost. It would be unfair to load on his customers generally the burden that would belong to a limited number."

In discussing the problem of service, the speaker pointed out clearly that the manufacturer is not trying to discourage his customers in asking for service, in fact such requests should be encouraged. The tool builder is in a position to compile this engineering material more economically than is the buyer, because of the equipment and data at his disposal. However, Mr. Gleason emphasized that considerable expense is involved and that it does not seem proper to charge this item to overhead and therefore distribute the cost to all machine tool purchasers. Mr. Gleason concluded his remarks by saying:

"I believe the time is soon approaching, if it is not already here, when every firm will have to make a special charge for all service which involves the solving of the particular problems which are outside of the general operation, care, and maintenance of the machine sold."

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265.	Hand shear, electric	11/3
194.	Riveter, pneumatic	9/1
229.	Screwdriver, pneumatic	10/6
142.	Wrenches, steel	7/7
	Welding Equipment	
137.	Electrode holder	7/7
240.	Electrode holder	10/6
160.	Welder, arc	8/4
220.	Welder, arc	10/6
251.	Welder, arc	11/3
227.	Welder, arc seam	10/6
183.	Welder, arc tank	9/1
266.	Welder, arc tank	11/3
	Miscellaneous	
154.	Burner, pulverized coal	8/4
175.	Burnishing machine, gear	9/1
172.	Compensator	8/4
188.	Compressor, air	9/1
198.	Coupling, air hose	9/1
208.	Coupling, flexible	9/1
173.	Engines, diesel	9/1
141.	Feed pump, hydraulic	7/7
232.	Frequency changer	10/6
225.	Furnace, heat treating	10/6
150.	Furnace, industrial	8/4
193.	Furnace bond tile	9/1
187.	Gear generator	9/1
245.	Gear generator	11/3
257.	Hardness indicator	11/3
170.	Hydraulic feed	8/4
186.	Leveler roller, sheet	9/1
163.	Lock nut	8/4
200.	Melting pot, electric	9/1
195.	Mill contactors	9/1
202.	Meters, electric	9/1
211.	Motor, electric	9/1
233.	Motor, electric	10/6
262.	Motor, electric	11/3
212.	Oil bath, electric	9/1
197.	Parallel rule attachment	9/1
254.	Pyrometer, optical	11/3
138.	Sand mixer	7/7
258.	Scale, electric dial	11/3
248.	Seaming machine	11/3
169.	Solenoids	8/4
136.	Speed reducer	7/7
235.	Speed reducer	10/6
192.	Speed transmission, variable	9/1
239.	Speed transmission, variable	10/6
256.	Sprocket, renewable tooth	11/3
167.	Starter for motor	8/4
236.	Starter for motor	10/6
156.	Switch, limit	8/4
168.	Transformer	8/4
264.	Windows, metal	11/3

FUEL used at refineries in the United States, 1925-1926 14 P

The machine tool index for the first half of 1927 *will be found on Page* 1447 *of the June* 2 *issue of* IRON TRADE REVIEW.

Fourteen Firms Join Metal Trades Association

Fourteen additional applicants for membership in the National Metal Trades association were approved recently by the executive committee. The new members are: Willys Morrow Co., Elmira, N. Y.; Chicago Flexible Shaft Co., Chicago; Darling Valve & Mfg. Co., Williamsport, Pa.; Hemp & Company Corp., St. Louis., Turley Gear & Machine Co., St. Louis; Wilson Foundry & Machine Co., Pontiac, Mich.; Fisher Body Ohio Co., Cleveland; Fisher Body St. Louis Co., St. Louis; Robert Jacob Eng. & Mach. Co., St. Louis; Westcott Valve Co., East St. Louis, Ill.; Haack-Williams Mfg. Co., Manhattan Perforated Metal Co., Inc., New York; Precision Castings Co., Inc., Fayetteville, N. Y.; and Ontario Silver Co., Muncie, Ind.

British Empire Steel's Report Better

The British Empire Steel Corp.'s report for 1926, delayed by litigation, shows operating profit to have been $4,424,118 compared with a loss of $1,133,442 in 1925. After deductions for depreciation, sinking fund interest etc., a surplus for the year of $1,138,468 remained which reduced the profit and loss deficit from $5,738,018 to $4,599,550. Net working capital showed an increase from $9,537,452 to $12,270,195. In his remarks to the shareholders, President Wolvin, dealing with the dominion iron and steel situation, points out that the administration have given serious consideration to the possibility or reorganization of the corporation, but that all attempts in this direction have met with unexpected difficulties and opposition.

British Paper Launched

Iron and Steel Industry is a new publication devoted to the iron and steel trade in the British Isles. It is published by the Louis Cassier Co., Ltd., London, Eng., which also issues *Metal Industry*. A feature is presentation of abstracts of articles in the foreign technical press.

Charles H. Birr, Alliance, O., has been appointed receiver for the Canton Steel Foundry Co. upon application by the Morgan Engineering Co., Alliance, the principal creditor. The foundry company plant has been idle for about five years. Liabilities are listed at $1,243,220 and assets at $560,000.

Canada Produces More Than Last Year

Toronto, Ont., Oct. 31.—Production of pig iron in Canada in September amounted to 52,470 long tons, compared with 63,234 tons in August, and 64,187 tons in September, 1926. The decline this month compared with August was mostly in basic iron. The cumulative production of pig iron for the nine months ending September, 570,414 tons, compared with 496,876 tons produced in the corresponding period of last year gives an increase of 15 per cent. Production of ferroalloys during September was 4771 tons, a slight decline from the 4839 tons produced in August.

Production of steel ingots and castings for September was 54,250 long tons, a decline of 30 per cent from 77,479 tons for August. Last September the total was 58,837 tons. September's total was the lowest for any month this year. For the first nine months the cumulative production of steel ingots and castings at 674,289 tons showed a gain of 12 per cent over 600,542 tons produced for the corresponding period of 1925. This year's output includes 641,498 tons of ingots and 32,791 tons of direct steel castings.

CONSTRUCTION *and* ENTERPRISE

Concise Timely Business Building Opportunities from Field of Industry

North Atlantic

BOSTON—Edison Electric Light Co. has awarded the structural steel contract for its new substation.

BOSTON—Cape Boston Mjning & Development Corp. has been incorporated with $250,000 capital to mine, smelt and refine copper and other ores and metals by Matthew Dixon, 19 Laurel street, Boston.

EAST SPRINGFIELD, MASS.—Rolls-Royce of America Inc. will transfer its body-building department to the plant of Brewster & Co. Inc., Long Island, N. Y., a subsidiary. The space at the East Springfield plant used for body-building before, will now be turned over to the repairing department.

SPRINGFIELD, MASS.—Interstate Airways Inc. has been incorporated with 500 shares no par value to manufacture airplanes and airplane material by Guy E. Moran, 1255 Westfield street, West Springfield, Mass.

SPRINGFIELD, MASS.—Negus Automatic Train Control Co. has been incorporated with $3500 capital to manufacture accident preventing devices for railroads, by Ralph G. Boyd, 161 Devonshire street.

WATERTOWN, MASS.—Webster Kimball Co. has been incorporated with $10,000 capital to manufacture tools, implements and machinery by William A. Webster Jr., 7 Arlington street, Cambridge, Mass.

WORCESTER, MASS.—Puritan Heater & Range Co. has been incorporated with $6000 capital to manufacture heaters, boilers, cooking appliances, etc., by James S. Allen, Winchester, Mass.

HARRISON, N. J.—Intertype Co. has awarded the steel for its new plant to the American Bridge Co., New York. (Noted Aug. 25)

KEARNY, N. J.—Western Electric Co. has awarded the structural steel for its plant addition, to McClintic-Marshall Co., Pittsburgh.

NEWARK, N. J.—L. A. Myers Jr., 139 Ogden street, manufacturer of metal goods, will build a 2-story addition 78 x 90 feet, and will install new equipment.

NEWARK, N. J.—Graham Machine Co. Inc. has been incorporated with 2500 shares no par value stock to engage in mechanical engineering by Bernard Freedman, Newark, attorney.

NEWARK, N. J.—Standard Testing Laboratories has been incorporated with 1000 shares no par value to deal in metals with Watson, Lehman & Wilguss, New York, correspondents.

NEWARK, N. J.—Hudson Smelting & Refining Co. has been incorporated with 50,000 shares, preferred, 2500 shares no par value, with Watson, Lehman & Wilguss, New York, correspondents.

NEWARK, N. J.—Kirby-McCool Co., maker of mechanical equipment, and the Kirby Machinery Co., 178 Commerce street, affiliated organizations, have acquired a 1-story building at 495-7 Ogden street which they will occupy for a new works.

NEW BRUNSWICK, N. J.—Goetze Gasket & Packing Co., Allen avenue, maker of gaskets and metallic packing for power machinery service, will build a 1-story addition, 40 x 52 feet. Harry G. Bach, 63 Schureman street, is architect.

BROOKLYN, N. Y.—Mansfield Iron Works, 878 East Forty-third street, contemplates building a 1-story plant addition.

BROOKLYN, N. Y.—Flexo Spring Mfg. Co. has been incorporated with $5000 capital to manufacture metal castings by P. Kapan, 217 Havemeyer street, attorney.

BROOKLYN, N. Y.—Meuer Metal Products Co. has been incorporated with $5000 capital to manufacture metal shingles by C. L. Beck, Westport, Conn., attorney.

BROOKLYN, N. Y.—LockTite Piston Ring Co. has been incorporated with $3000 capital to manufacture auto accessories with Celler & Kraushaar, 51 Chambers street, correspondents.

NEW YORK—Dan-Hee Metal Products has been incorporated with $10,000 capital by Zalkin & Cohen, 49 Chambers street, attorneys.

NEW YORK—Tappan Steel Homes Corp. has been incorporated with $10,000 capital by H. J. Wehle, Jamaica, attorney.

NEW YORK—Gahlin Iron Works has been incorporated with $5000 capital by M. F. Pinto, 292 Madison avenue, attorney.

NEW YORK—Kraman Iron Works has been incorporated with $1500 capital by H. Koppelman, 144 Rivington street, attorney.

NEW YORK—Automatic Rivet Corp. has been incorporated with $100,000 preferred and

Resale Equipment News

PLANT and equipment of the Auto Body Co., Lansing, Mich., will be disposed of at receiver's auction sale at the plant, Grand River avenue and Turner street, Nov. 15-17. Samuel T. Freeman & Co. are auctioneers. The sale will include 12 parcels of real estate; woodworking machinery; machine shop equipment, 18 hammers, 13 drill presses, 15 punch presses, four sensitive drills, four universal machines, shaper, planer, hack saws, two millers, bulldozer, three lathes, 15 grinders; metal working machinery, three presses, six rotary and five squaring shears, four brakes, seven spot and a seam welder, two forming rolls, three beaders; small tools; power plant, four 300-horsepower water tube boilers, 225 and 275-horsepower engines direct connected to 150 and 275 kilovolt-ampere generators, three air compressors. Machinery will be sold only in separate lots.

* * *

Navy surplus and surveyed material will be sold Nov. 15 at the Philadelphia yard. It will include 1,855,500 pounds of ferrous metals, 120,000 pounds of nonferrous metals, 48 engines, 200-horsepower main motor for submarine, electrical material, pumps, machinery, ovens and ranges, tanks and containers, ship fittings, plumbing supplies and motor generators.

* * *

Assets of the Rickenbacker Motor Car Co., Detroit, will be put up at public sale Nov. 28. The sale will include both plants. Previous attempts to dispose of the plants and equipment have been unsuccessful.

* * *

The foundry of the Magee Furnace Co., Taunton, Mass., consisting of buildings with 143,000 square feet, on 16 acres, will be sold by Willard Welsh Realty Co. Inc., Boston. The equipment includes a cupola of 12 tons per hour capacity and machinery driven by electric motors.

Sales Calendar

Nov. 15—*Navy Surplus and surveyed material auction at Philadelphia.*

Nov. 15—*Sale of plant and equipment of the Auto Body Co., Lansing, Mich.*

Nov. 28—*Assets of Rickenbacker Motor Car Co., Detroit, at public sale.*

Iron and Manganese Ores and Minerals

LAKE SUPERIOR ORES

Iron Ore

Per Gross Ton Lower Lake Ports

Old range bessemer, 51½ per cent iron	$4.55
Mesabi bessemer, 51½ per cent iron	4.40
Old range nonbessemer, 51½ per cent iron	4.40
Mesabi nonbessemer, 51½ per cent iron	4.25

EASTERN LOCAL ORES

Cents per unit delivered at Eastern Pennsylvania and New Jersey furnaces

Foundry and basic 58 to 63 per cent	8.75 to 9.00
Copper free low phosphorus 58 to 65 per cent	nominal

FOREIGN IRON ORE

Cents per unit, alongside docks, Atlantic ports

Spanish manganiferous ore, 54 per cent iron and 2 to 4 per cent manganese	10.25 to 10.75
North African low phosphorus	11.00 to 11.50
Swedish foundry or basic, 62 to 65 per cent	9.50 to 9.75
Spanish foundry or basic, 52 to 56 per cent	9.50 to 9.75
North African foundry and basic 50 to 56 per cent	9.25 to 9.75

Manganese Ore

Prices do not include duty at rate of 1 cent per pound of metallic manganese contained.

Brazilian	36 to 38 cents
Indian	36 to 38 cents
Caucasian, 53 to 55 per cent washed	38 to 40 cents

Fluorspar

85 and 5 per cent grade

Washed gravel, Kentucky and Illinois mines, per net ton	$16.00
Washed gravel, imported duty paid eastern tidewater, per net ton	16.00 to 16.50

1000 shares no par value stock by Chadbourne, Hunt, Jaeckel & Brown, 165 Broadway, attorneys.

NEW YORK—Dunn Painting Machine Corp. has been incorporated with $20,000 capital with R. L. Wensley, correspondent.

NEW YORK—Demley has been incorporated with 100 shares no par value stock to manufacture cigar lighters with J. Eisner, 366 Broadway, correspondent.

NEW YORK—Richmond Machinery Corp. has been incorporated with $20,000 capital with A. C. Gonzales, 1540 Broadway, correspondent.

NEW YORK—Columbia Printing Machinery Corp. has been incorporated with $25,000 preferred, 250 shares no par value by M. M. Eisenberg, 26 Court street, attorney.

NEW YORK—J. Wolf Mfg. Co. has been incorporated with $10,000 capital to manufacture machinery with Greenberg & Giller, 261 Broadway, correspondents.

NEW YORK—U. S. Scientific Instrument Corp. has been incorporated with $25,000 capital to engage in machine shop work, by L. Bassiano, 2211 Second avenue, attorney.

NEW YORK—Brintel Mfg. Corp. has been incorporated with 200 shares no par value stock to manufacture electrical typewriting machines with B. M. Komar, 67 Wall street, correspondent.

PHILADELPHIA—Philadelphia Rapid Transit Co. has awarded the structural steel contract for its shops to Belmont Iron Works, Philadelphia.

PHILADELPHIA—Davis Bros. Inc., 4250 Wissahickon avenue, maker of spikes, nails, etc., has awarded the general contract for a 1-story addition to Bishop & Co. Inc., Real State Trust building.

SHARON, PA.—Sharon Steel Hoop Co. has awarded the structural steel for its machine shop, to Pittsburgh Bridge & Iron Works, Pittsburgh.

YORK, PA.—Hoff Chain Co., H. O. Sakemiller, treasurer, plans to operate a local factory for the manufacture of steel chains, etc.

East Central

CHICAGO—Riverside Iron Works has awarded the general contract for its 1-story 50 x 50-foot plant at 10625 Buffalo avenue.

CHICAGO—Raffel Mfg. Co., 4441-47 Armitage street, has awarded the general contract for a 2-story addition, 48 x 125 feet, to its machine shop.

CHICAGO—S. & S. Machine Works, 4539 West Lake street, has awarded the general contract for a 1-story plant addition to F. Voras & Co., 4101 North Western avenue.

CHICAGO—Freeland H. Leslie, maker of wrought iron furniture, will build a 1-story plant on newly acquired property 50 x 150 feet, at 2943 Carroll avenue.

CHICAGO—Morkrum-Kleinschmidt Corp., maker of automatic telegraphic instruments, will build a 3-story addition on newly acquired property.

CHICAGO—South Chicago Auto Radiator Works, 2938 East Ninety-first street, has awarded the contract for a 1-story factory shop 50 x 50 feet to W. B. Mitchell, 9233 Commercial street.

CHICAGO—Meuhlhausen Spring Co., Chicago, is moving into its new plant 140 x 300 feet, at Logansport, Ind., where the main office is to be located. The middle western sales office will be located in Chicago.

CHICAGO—A. Finkl & Sons Co. has awarded the structural steel contract for its machine shop at Cortland street and the Chicago river, to American Bridge Co., New York. (Noted Oct. 27).

CHICAGO—Safety Pressure Valve Mfg. Co. Inc., 110 South Dearborn street, has been incorporated with $20,000 capital to manufacture automobile devices, etc., with William L. Schmetzer & Co., 110 South Dearborn street, correspondents.

CHICAGO—Kol-Ite Corp., 1420 South Michigan avenue, has been incorporated with $15,000 capital to manufacture novelties, electrical devices, etc., with McGilvry, Eames, Vaughan & Tilley, Title and Trust building, correspondents.

JOLIET, ILL.—Joliet Sanitary Mfg. Co., North Broadway, has been incorporated with $100,000 capital to manufacture and deal in bathroom and general plumbing fixtures and fittings, with Donovan, Bray & Gray, Rialto Square, correspondents.

ROCKFORD, ILL.—Bell Motor Co., 317 Church street, has been incorporated with $20,000 capital to manufacture and deal in automobile accessories and parts with Hinchcliff & Miller, Rockford National Bank building, correspondents.

DETROIT—General Abrasive Co., Niagara Falls and Detroit, has been incorporated with $250,000 capital and 1500 shares, no par value.

DETROIT—Oakland Motor Car Co., division of General Motors Corp. has awarded the steel contract for the construction of its new plant, to an unstated Detroit fabricator.

DETROIT—Lonz Mfg. Co., maker of automobile radiators and clutches, has started construction on the first unit of its new plant. It will be a 1-story building 128 x 402 feet and will be equipped with modern clutch-manufacturing machinery.

HIGHLAND PARK, MICH.—Chrysler Motor Corp., 341 Massachusetts avenue, plans to build a 4-story automobile plant, 60 x 400 feet. Smith, Hinchman & Grylls, 800 Marquette building, are architects.

CINCINNATI—Franklin Gas Appliance Co. has been incorporated with 600 shares no par value by Paul B. Hunt, Thomas A. Carney and Guy H. Ijams.

CLEVELAND—Cleveland Steel Specialty Corp. has been incorporated with 250 shares no par value by Emil W. Acker, Harry H. Graham and L. Beaumont Parks.

COLUMBUS, O.—Boyd Sign & Signal Corp. has been incorporated with $25,000 capital by Harrison M. Boyd, Dawn D. Kober and E. Kober.

GALION, O.—Galion Iron Works & Mfg. Co. has awarded the general contract for its new plant, 90 x 325 feet, to the W. J. Shirmer Co., Cleveland.

TOLEDO, O.—Surface Combustion Co., 366 Gerard avenue, H. L. Doherty, president, has awarded the general contract for a 1-story

plant addition to Austin Co., 16112 Euclid avenue, Cleveland.

YOUNGSTOWN, O.—Truscon Steel Co. plans to enlarge its sash and steel window departments at the Albert street works here.

HUNTINGTON, W. V.—A. F. Thompson Mfg. Co., W. H. Thompson, Vernon street, secretary-treasurer, plans to increase facilities to double the output of the plant. The company manufactures gas heaters and burners.

CEDARBURG, WIS.—American Electric Motors Inc. plant, recently acquired by the Splitdorf-Bethlehem Electric Co., will be enlarged by the latter company with a 2-story addition 60 x 80 feet. Walter Rautenstrauch is president and general manager of the Cedarburg division.

KEWAUNEE, WIS.—Kewaunee Mfg. Co., maker of hardwood products, will build new buildings and plans to buy additional machinery.

MADISON, WIS.—C. B. Fritz & Co., local contractors, are successful bidders for erecting a garage, 66 x 250 feet, 2-story, at 200 West Doty street, for the Madison Garage Co. Architects Flad & Moulton are in charge.

MILWAUKEE—A loss to buildings and equipment was caused by fire in the enamel room of the Meinecke Mfg. Co., 1677 Richards street, maker of wood and metal toys and novelties. Repairs are under way.

MILWAUKEE—Lakeside Bridge & Steel Co. has taken the contract for the tainter gates, and the D. J. Murray Mfg. Co., Wausau, Wis., for the gate hoist equipment on the new hydroelectric generating plant being built on the Wolf river near Shawano, Wis., by the Wisconsin Power & Light Co., Madison.

RICE LAKE, WIS.—Northway Mfg. Co., has been incorporated with $10,000 capital to manufacture tools and wrenches, door locks and hinges and sporting goods, including a combination sled, skii and toboggan by E. J. Gustafson and C. Frederickson of Rice Lake and P. M. L. Nelson of Hillsdale, Wis.

WAUSAU, WIS.—Marathon Realty Co. will build an automobile building for the use of the Jonas Cadillac Co., Milwaukee, at Third and Grant streets here. It will be 80 x 120 feet. Oppenhamer & Obel, local architects, are completing plans.

PHOENIX, ARIZ.—Pacific Coast Steel Products Co., Los Angeles, plans branch factory, 70 x 120 feet for manufacture of wire products. J. L. Loungren is manager.

LOS ANGELES—Hurley Machine Co., 600 West Jackson boulevard, Chicago, maker of vacuum cleaning machines and parts, etc., plans to build an assembling plant here on property recently acquired.

SAN FRANCISCO—Pacific Can Co., 200 Division street, will start construction soon on a new 1-story plant.

SEAL BEACH, CALIF.—Crawford Motor & Airplane Co. has construction under way for the first unit of its airplane factory.

DENVER—H. H. Tammen & Co. will construct warehouse and work shop, two stories, 124 x 138 feet, at 2653 Larimer street. Mead & Mount, First National Bank building, awarded general contract.

PUEBLO, COLO.—Pueblo Aircraft Inc., H. Peterson, First National Bank building, attorney, plans to built an airplane factory.

PUEBLO, COLO.—Midwest Steel & Iron Co. has awarded the contract for the second unit 50 x 54 feet, of its plant, and also the addition 16 x 96 feet, to its present shop, on East Northern avenue. (Noted Aug. 4)

SEATTLE—Fishing Vessel Owners & Marine Ways Inc. will build a machine shop at 1511 Thurman avenue.

SEATTLE—Carpenter Machine Works plans to build a machine shop at 2538 Westlake avenue North.

ANNISTON, ALA.—Alabama Power Co. has awarded the contract for structural steel for its power house at lock No. 18 on Coost river, to Ingalls Iron Works Co. Inc., Birmingham, Ala.

GADSDEN, ALA.—Structural steel contract for the shop of the Agricola Furnace Co. has been awarded the Ingalls Iron Works Co. Inc., Birmingham, Ala.

JACKSONVILLE, FLA.—Standard Motor Equipment Corp., Barnett Bank building, C. B. Lozier, president, will build a plant to manufacture air cooled spark plugs, on newly acquired property. A ceramic plant to make porcelain insulators also will be built.

MIAMI, FLA.—Yeager Sheet Metal & Roofing Co. Inc. has been incorporated with $10,000 capital by T. B. Everhart, 1052 Northeast Second street.

MIAMI, FLA.—Art Metal Storm Shutter & Awning Co. has been incorporated by J. E. Holland, Congress building; H. M. and H. S. Hill.

Refractories

FIRE CLAY BRICK
Per 1000 f.o.b. works
First Quality

Pennsylvania	$43.00 to 46.00
Ohio	43.00 to 46.00
Illinois	43.00 to 46.00
Kentucky	43.00 to 46.00
Missouri	43.00 to 46.00
Maryland	43.00 to 46.00
Georgia and Alabama	40.00 to 45.00

Second Quality

Pennsylvania	35.00 to 38.00
Ohio	35.00 to 38.00
Illinois	35.00 to 38.00
Kentucky	35.00 to 38.00
Missouri	35.00 to 38.00
Maryland	35.00 to 38.00
Georgia and Alabama	30.00 to 35.00

SILICA BRICK

Pennsylvania	43.00
Joliet, Ill., and East Chicago, Ind.	52.00
Birmingham	51.00

MAGNESITE BRICK
Per Net Ton

9 x 4½ x 2½	65.00

MAGNESITE

Per Net Ton Chester, Pa. and Baltimore base	
Dead-burned grain magnesite	40.00

CHROME BRICK

Per Net Ton Chester, Pa., and Baltimore base	
9 x 4½ x 2½	45.00

ORLANDO, FLA.—Automotive Elevator Corp. has been incorporated with $100,000 capital by C. W. Rood, W. E. Smythe and Wayne Gray.

ATLANTA, GA.—Watkins Mfg. Co., H. Gee Jr., Wichita, Kans., manager, plans to build a rebabbitting plant on newly acquired property here.

MACON, GA.—Southern railway system will begin work shortly on increasing and improving its present facilities, to include a new roundhouse, locomotive shops, modern coaling system, etc.

SHREVEPORT, LA.—L. L. Featherstone, 516 Dalzell street, contemplates forming an organization to be known as the Southwestern Cast Iron Pipe Co., and plans to build one or more plants.

TARBORO, N. C.—State highway commission, F. C. Kugler, commissioner, is inquiring for machinery and equipment, including rolls, punches, riveting machines, etc., for the manufacture of corrugated metal pipe.

RICHMOND, VA.—Charles A. Levine has an option on property here and contemplates building a plant for the manufacture of airplanes and parts. The project will include hangars and a flying field.

ARLINGTON, TEX.—Southern Ornamental Iron Works, Box 27, Dallas, Tex., F. E. Austin president, will build a plant 100x300 feet. The company manufactures ornamental iron, elevator doors, fire escapes, etc. (Noted Oct. 6)

DALLAS TEX.—Southern Ornamental Iron Works will build a new plant to include a foundry and machine shop, to manufacture ornamental iron elevator doors, fire escapes, etc.

DEEPWATER, TEX.—Houston Lighting & Power Co. plant here will be enlarged to take care of increasing demand for power in this territory.

FORT WORTH, TEX.—American Mfg. Co., Hodge station, contemplates building a plant for the manufacture of oil well supplies.

SAN ANTONIO—Alamo Iron Works will increase its capital from $1,000,000 to $2,000,000 to provide for additions to be made at its plants at Brownsville and San Antonio, and the construction of an additional plant at Corpus Christi. Two new shop buildings and a new steel and sheet metal warehouse will be built at San Antonio.

SAN BENITO, TEX.—Southern Iron & Ma-

chine Co., 362 North Bowie street, F. H. Wedegartner, manager, is inquiring for machinery and equipment, including molds, drill presses, cutters etc. for the manufacture of irrigation gates in its recently acquired plant. (Noted Oct. 20)

BENNETSVILLE, S. C.—Farmers' Salvage Co. has established a plant to rebuild farm machinery and implements. Additional plants are contemplated in North and South Carolina, Georgia, Alabama, Mississippi and Louisiana.

West Central

DAVENPORT, IOWA—Standard Calorimeter Co., Fifty-third street and Second avenue, will build an addition to its plant.

WATERLOO, IOWA—Waterloo Airport Corp. has awarded the general contract for a steel hangar and a machine shop, to Mauser & Fell, 219 West Mullan street.

INDEPENDENCE, KANS.—Gleaner Combine Harvester Corp. will build a 1-story factory. R. J. Hanson, Cottage and Hayward streets, is plant manager.

KANSAS CITY, MO.—Clay & Bailey, 7007 East Fifteenth street, maker of plumbing equipment and supplies, contemplates a new plant at Independence, Mo., where property has been acquired recently.

SPRINGFIELD, MO.—L. J. Kent Boiler & Iron Works, 700 East Brower street, contemplates building a plant at Central street and Summit avenue, 100x140 feet. A 25-ton capacity electric crane will be installed.

ST. LOUIS—Hemp & Co. Corp. Louis W. Hemp, 1939 Vandeventer street, president, will build a tinware factory to replace the one destroyed in the recent tornado.

ST. LOUIS—Carondelet Foundry Co., 2101 South Kingshighway, has awarded the general contract for alterations to molding room to W. Ferris & Co., 2929 Locust street.

Business in Canada

CALGARY, ALTA.—Triplex Threshing Machine Co. Ltd. has been incorporated to manufacture and deal in threshing machines and farm implements, with $100,000 capital by Percy L. Sanford, Alexander Hannah, Everett J. Chambers.

VANCOUVER, B. C.—British Columbia Electric railway, Hastings and Caroll streets, has awarded contract to Pacific Engineer Ltd., 827 Powell street, Vancouver, for boring a power tunnel from Seaton lake to Bridge river, a distance of two and one-half miles. The above work is in connection with extensive power development project proposed by the company. Engineer, E. E. Carpenter, care of the company.

WINNIPEG, MAN.—Manitoba Power Co., proposes to install two or more new units of 40,000 horsepower each.

WINNIPEG, MAN.—Barloch Mining Corp. Ltd. has been incorporated to mine, smelt and refine ores, metals, and minerals with 2,000,000 shares no par value by William C. Lock, William A. Johnston, and Frank T. Spence.

NEW GLASGOW, N. S.—It is reported that a plant for the finishing of stove bolts will be added to the bolt and nut department of the Nova Scotia Steel & Coal Co. Machinery and tools will be installed including a multiple threading outfit to handle bolts up to five-eighths of an inch. I. Moeller is general superintendent of the steel and car plants, and Howard Cantley is in charge of steel operations.

WINDSOR, N. S.—Hanson & Flett are planning the following additions to their plant on O'Brien street here: Machine shop, 50 x 90 feet; molding shop and foundry 40 x 40 feet; rebuilding forge shop, 23 x 35 feet. New tools and machinery will be required for proposed additions. All work is to be completed this year.

BELLEVILLE, ONT.—Carl Read & Co. Ltd. has been incorporated to manufacture and deal in batteries and other electrical instruments, with $40,000 capital by Edmund D. O'Flynn, John D. O'Flynn and Margaret Pratt.

BRIDGEBURG, ONT.—Bright Auto Bumper Co. of Canada Ltd. has been incorporated to manufacture and deal in bumpers, road lights and automobile accessories with $50,000 capital by Tobias F. Forestel, Edward W. Johnston, and Alan S. Jackson.

LONDON, ONT.—C. S. Hyman & Co., Richmond street, are having plans prepared for a factory addition with construction to be started early next spring.

OTTAWA, ONT.—Standard Dredging Co. Ltd. has been incorporated with $100,000 capital by Robert G. Stewart, Earnest A. Larmouth and Edward J. Daly.

TORONTO, ONT.—Windsor Cobalt Silvers Ltd. has been incorporated to mine, smelt and refine ores, metals and minerals with $2,000,000 capital by Frederick A. Day, Thomas M. Mungovan and Joseph P. Walsh.

TORONTO, ONT.—Rand-Ore Mines Ltd. has been incorporated to mine, smelt and refine ores, metals and minerals with $3,500,000 capital by Alexander D. Crooks, Alan C. MacRobie and Charlotte C. Pennington.

TORONTO, ONT.—Quicklock Doorknob Ltd. has been incorporated to manufacture and deal in locks, safes, doorknobs, spindles, etc., with $250,000 capital by Samuel G. Forst, George E. Burton and Harry B. Kennedy.

TORONTO, ONT.—Olivet Gold Mines Ltd. has been incorporated to mine, smelt and refine, ores, metals, and minerals with $5,000,000 capital by Elmer E. Wallace, Walter W. McKeown and William J. Hanley.

TORONTO, ONT.—Northward Mines Ltd. has been incorporated to mine, smelt and refine ores, metals and minerals, with $3,000,000 capital by Arthur J. Trabilcock, James E. Lawson and James H. Wright.

TORONTO, ONT.—National Exploration Co. Ltd. has been incorporated to mine, smelt, and refine ores, metals and minerals with $20,000 capital by Douglas G. H. Wright, Thomas N. Poole and Ethel M. Melville.

New Trade Publications

DRAFT CONTROL—Regulation of air in its coke ovens by automatic reversal by clockwork is described in a bulletin by the Semet Solvay Engineering Corp., New York.

CENTRIFUGAL AIR COMPRESSORS—General Electric Co., Schenectady, N. Y., has issued a bulletin on its single stage centrifugal air compressors, illustrated in detail and presenting engineering data.

AIR FILTERS—Filtering air to remove dust is described in a bulletin by the Air Filtration Corp., 149 Broadway, New York, Construction and operation of its devices are illustrated and data are given to indicate sizes needed for various installations.

SMOOTH FINISH MACHINING—A booklet has been issued by International Nickel Co., New York, on machining of steel. It is a practical explanation of shop practice for obtaining a smooth finish on plain and alloy steels by avoiding the critical range in volume removal rates. Tables indicate the most satisfactory cutting speeds at which the lathe should be operated.

AUTOMATIC CONTROL—Elimination of the human element by substitution of automatic devices in controlling temperatures in various industrial processes is the theme of a leaflet by the Brown Instrument Co., Philadelphia. Each page contains a typical installation for an industry, with brief recital of advantages which may be obtained.

FIRE PROTECTION—An automatic device for delivering foam to extinguish fire in inflammable liquids is described in a leaflet by the Pyrene Mfg. Co., Newark N. J. Advantages of this method of extinguishing fire are set forth and its operation described.

INDUCTION MOTORS—Reliance Electric & Engineering Co., Cleveland, has issued a bulletin describing a new line of motors. They are fully enclosed, fan-cooled, induction motors, with ball bearings. They are designed for use where the motor is exposed to much dirt, iron dust and moisture. Drawings and halftones illustrate construction.

RUST PROTECTION—A leaflet issued by the American Rolling Mill Co., Middletown, O., explains the process of rusting or oxidizing of iron and suggests the use of its product. The claim is that its purity will retard slow corrosion by the elements.

RECORDING INSTRUMENTS — Accurate facts on which to base conclusions is the text of a leaflet by the Foxboro Co. Inc., Foxboro, Mass. It presents illustrations of various types of its recording instruments which furnish facts on which to base many conclusions of value to the executive.

STEEL CASTINGS—Sivyer Steel Casting Co., Milwaukee, in its current bulletin, suggests that better castings supply something additional to the buyer and may make the difference between large and small sales. Quality as a selling factor is presented as a point worth considering.

Discounts and Extras

Steel Pipe

Pittsburgh and Lorain basing discounts, jobber's carloads.

Evanston, Ill., and Indiana Harbor, Ind., take differential 2 points less discount.

Chicago takes differential 2½ points less than Pittsburgh-Lorain basis.

Butt Weld

	Black	Galvanized
⅛-inch	45	19½
¼ and ⅜-inch	51	25½
½-inch	56	42½
¾-inch	60	48½
1 to 3-inch	62	50½
Lap Weld		
2-inch	55	43½
2½ to 6-inch	59	47½
7 to 8-inch	56	43½
9 and 10-inch	54	41½
11 and 12-inch	53	40½
REAMED AND DRIFTED		
Butt Weld		
1 to 3-inch	60	48½
Lap Weld		
2-inch	53	41½
2½ to 6-inch	57	45½
EXTRA STRONG—PLAIN ENDS		
Butt Weld		
⅛-inch	41	24½
¼ and ⅜-inch	47	30½
½-inch	53	42½
¾-inch	58	47½
1 to 1½-inch	60	49½
2 to 3-inch	61	50½
Lap Weld		
2-inch	53	42½
2½ to 4-inch	57	46½
4½ to 6-inch	56	45½
7 to 8 inch	52	39½
9 and 10-inch	45	32½
11 and 12-inch	44	31½
DOUBLE EXTRA STRONG		
Butt Weld		
⅛-inch	42	32½
¼ to 1½-inch	45	35½
2 to 2½-inch	47	37½
Lap Weld		
2-inch	41	32½
2½ to 4-inch	43	34½
4½ to 6-inch	42	33½
7 to 8-inch	38	25½

(Note—Large jobbers obtain additional preferential discounts of 1 and 5 on black and 1½ and 5 on galvanized. These preferentials increased by one extra 5 per cent in meeting complications.)

Wrought Iron Pipe

Pittsburgh basing discounts, jobbers' carloads. Individual quotations made on delivered basis.

THREADS AND COUPLINGS

Butt Weld		
¼ and ⅜-inch	+11	+39
½-inch	22	2
¾-inch	28	11
1 to 1½-inch	30	13
Lap Weld		
1¼ and 1½-inch	Upon application	
2-inch	23	7
2½ to 6-inch	26	11
8 to 6-inch	28	13
7 to 12-inch	26	11
PLUGGED AND REAMED		
Two points less than above		
EXTRA STRONG, PLAIN ENDS		
¼ and ⅜-inch	+19	+54
½-inch	21	7
¾-inch	28	12
1 to 1½-inch	30	14
Lap Weld		
2-inch	23	9
2½ to 4-inch	29	15
4½ to 6-inch	28	14
7 to 8-inch	21	7
9 to 12-inch	16	2

DOUBLE EXTRA STRONG

Butt Weld		
½-inch	47½	+59½
¾-inch	+28	+40
1-inch	+34	+46
1¼-inch	+28	+40
1½-inch	+27	+39
Lap Weld		
2 and 2½ inches	+13	+25
3 to 4-inch	+ 8	+17
4½ to 6-inch	+ 9	+18
8-inch	+12	

(Note—Large jobbers obtain additional preferential discounts of 1, 5 and 2½ on black and galvanized.)

Boiler Tubes

Pittsburgh less carload discounts. Carload 4 points larger

STEEL (Lap Welded)

2 and 2¼-inch	23 off
2½ and 2¾-inch	33 off
3-inch	36 off
3¼ to 3¾-inch	38½ off
4 to 13-inch	42 off

(Note—Additional discounts of 5 to 7 extra 5 per cents now being given.)

CHARCOAL IRON

1½-inch	+22
1¾-inch	+12
2 and 2¼-inch	+ 2
2½ to 3-inch	3
3¼ to 4½-inch	5

(Note—Additional discounts of 2 or 3 extra 5 per cents now being given.)

SEAMLESS COLD DRAWN

1-inch	56 off
1¼ and 1½-inch	48 off
1¾-inch	32 off
2 and 2¼-inch	27 off
2½ and 2¾-inch	35 off
3-inch	41 off
3¼ and 3½-inch	43 off
4-inch	46 off
4½, 5 and 6-inch	41 off

SEAMLESS HOT ROLLED

2 and 2½-inch	30 off
2½ and 2¾-inch	38 off
3-inch	44 off
3¼ and 3½-inch	46 off
4-inch	49 off
4½, 5 and 6-inch	44 off

(Note—Additional discounts of 2 or 3 extra 5 per cents now being given.)

SEAMLESS STEEL MERCHANT BOILER TUBES

Extras:

Add $8 per ton for more than four gages heavier than standard and add 10 per cent to theoretical weight.

Add 5 per cent for lengths over 24 feet and not over 26 feet.

Smaller tubes than 1-inch and lighter than standard gage to be sold at mechanical tubing list and discount.

Intermediate sizes and gages not listed above take price of next larger outside diameter and heavier gage.

SEAMLESS STEEL MECHANICAL TUBING

Base Discounts on New List July 1, 1925

Carbon 0.10 to 0.20 per cent.....50 to 55 off

Carbon 0.30 to 0.40 per cent.....45 to 50 off

SEAMLESS STEEL LOCOMOTIVE AND SUPERHEATER TUBES

Net prices per foot f.o.b. Pittsburgh

Outside diameter	Gage	Price
2-inch	12-gage	14¼c
2-inch	11-gage	15c
2-inch	10-gage	16c
2¼-inch	12-gage	16c
2¼-inch	11-gage	17c
2¼-inch	10-gage	18c
3-inch	7-gage	33c
5⅜-inch	9-gage	50c
5½-inch	9-gage	52c

Plus usual extras for forming and for long lengths over 18 feet and for commercially exact lengths.

Plate Extras

BASE

Rectangular plates, tank steel or conforming to manufacturers' Standard Specifications for structural steel, dated Nov. 24, 1922, or equivalent, ¼-inch thick and over on thinnest edge, (except for ¼-inch or 72 inches wide when ordered to weight in pounds per square foot—see width and gage extras), 100 inches wide and under, down to but not including 6 inches wide, 5 feet 0 inches long up to published limit in length but not over 80 feet 0 inch, are base. Extras per pound for width or diameter.

All Plates, Rectangular or Otherwise

¼-inch thick and heavier, but not less than 11 pounds per square foot, if ordered to weigh—

Over 100 inches to and including 110 inches	.05c
Over 110 inches to and including 115 inches	.10c
Over 115 inches to and including 120 inches	.15c
Over 120 inches to and including 125 inches	.25c
Over 125 inches to and including 128 inches	.50c
Plates less than ¼-inch or lighter than 11 pounds per square foot.	
Over 72 inches to and including 84 inches	.10c
Over 84 inches to and including 96 inches	.20c
Over 96 inches to and including 100 inches	.30c
Over 100 inches add .35c to width extras for plates ¼-inch thick and heavier.	

GAGE

Plates not Exceeding 72 Inches Wide

Plates less than ¼-inch gage, to and including 3/16-inch; or lighter than 10.2 pounds per square foot, to and including 7.65 pounds per square foot .20c

Plates over 72 Inches Wide

Plates less than ¼-inch gage, to and including 3/16-inch; or lighter than 11 pounds per square foot, to but not including 7.65 pounds per square foot. 20c

Plates ordered 7.65 pounds per square foot .30c

QUALITIES

Pressing steel	.10c
Flange steel (boiler grade)	.15c
Ordinary firebox steel	.20c
Stillbottom steel	.30c
Locomotive firebox steel	.50c
Marine steel	1.50c
Hull materials subject to U. S. Navy Dept. Specifications for Medium or Soft Steel	.10c
High tensile hull steel subject to U. S. Navy Dept. or equivalent specifications	1.00c
Boiler steel subject to U. S. Navy Dept. Specifications, classes A and B	1.50c
Hull plates to hull specifications, required to stand cold flanging, take extra for flange steel.	

Floor Plates

Checkered plates 1.75c

Checkered plates are not furnished to sketch and are rolled from "Stock Steel" only. No physical tests will be made on checkered plates.

INSPECTION

Mill inspection .....No extra

Charges for other inspection, such as Lloyd's or American bureau of shipping, will be made by inspection bureau direct to buyer.

CUTTING

LENGTH OR DIAMETER

All Plates, Rectangular or Otherwise

Five feet and over up to published limit of length, but not over 80 feet	No extra
Under 5 feet to 3 feet inclusive	.10c
Under 3 feet to 2 feet inclusive	.25c
Under 2 feet to 1 foot inclusive	.50c
Under 1 foot	1.55c
Over 80 feet to 100 feet inclusive	.10c

Over 100 feet add .25c plus .05c for every additional 2 feet or fraction thereof.

Regular Sketches

With not more than four straight cuts. (Including straight taper plates)

Additional extra ..... .10c

Irregular Sketches

With not more than four straight cuts. (Sketches cannot be sheared with re-entrant angles)

Additional extra ..... .20c

Model 24-P ejection type press, having box 100" long, 20" wide, 32" deep. Finished bales measure 20" x 16" x 16" minimum. Can be equipped with power operated loading hopper.

LOGEMANN SCRAP METAL PRESSES

Hydraulically compressed scrap commands at all times the *best price*, and can be conveniently stored and held for favorable markets; it is easily handled; it practically eliminates corrosion; it saves much time in remelting; cars can be easily loaded to capacity.

***LOGEMANN Presses* are built in several types and sizes to suit all requirements.**

You cannot go wrong on a LOGEMANN—it's a money maker from the day it is set in operation.

Pioneers!

LOGEMANN Scrap Metal Presses, pioneers in this industry, enjoy an enviable reputation for long life and economical operation. They are in daily use in practically every large sheet mill, stamping plant, scrap yard, and in metalworking establishments of all kinds.

Our many years of accumulated experience, and services of our Engineering Department are at the disposal of all plants accumulating metal scrap of any kind.

LOGEMANN BROTHERS COMPANY
3126 Burleigh St. Milwaukee, Wis.

"Where-To-Buy"

A classified-by-products list of advertisers for the convenience of readers. If you don't find what you want, write us and we will tell you where to get it. ¶Index to advertisements will give you page number of any advertisers and by referring to advertisement you can get full particulars about products.

ABRASIVES
Pittsburgh Grinding Wheel Co. Rochester, Pa.

ABRASIVE (Polishing)
Norton Co., Worcester, Mass.

ACCUMULATORS
Birdsboro Steel Foundry & Machine Co., Birdsboro, Pa.
Logemann Brothers Co., 3126 Burleigh St., Milwaukee, Wis.
United Engineering & Foundry Co., Farmers Bank Bldg., Pittsburgh, Pa.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.

ACETYLENE (Dissolved)
International Oxygen Co., Newark, N. J.
Prest-O-Lite Co., The, 30 E. 42nd St., New York City.

ACETYLENE GENERATORS
Air Reduction Sales Co., 342 Madison Ave., New York City.
Oxweld Acetylene Co., 30 E. 42nd St., New York City.

ACETYLENE IN CYLINDERS
Air Reduction Sales Co., 342 Madison Ave., New York City.
International Oxygen Co., Newark, N. J.
Prest-O-Lite Co., The, 30 E. 42nd St., New York City.

ACIDS (Pickling)
American Chemical Paint Co., Ambler, Pa.

ADAMITE ROLLS
American Adamite Co., The, 12th and Etna Sts., Pittsburgh, Pa.

AIR COMPRESSORS—See COMPRESSORS (Air)

AIR FILTERS
Midwest Air Filters, Inc., Bradford, Pa.

ALLOYS
Electro Métallurgical Sales Corp., 30 E. 42nd St., New York City.
Lavino, E. J., & Co., Bullitt Bldg., Philadelphia, Pa.
Metal & Thermit Corp., 120 Broadway, New York City.
Titanium Alloy Mfg. Co., Niagara Falls, N. Y.
Vanadium Corp. of America, 120 Broadway, New York City.

ALUMINUM (Vanadium)
Vanadium Corp. of America, 120 Broadway, New York City.

ALUMINUM
Summerill Tubing Co., Bridgeport, Pa.

ANGLES, TEES, CHANNELS—See STEEL (Structural)

ANNEALING BOXES
Farrell-Cheek Steel Foundry Co., Sandusky, O.
Pittsburgh Annealing Box Co., 801 Beaver Ave., N. S., Pittsburgh, Pa.
Riter-Conley Co., Oliver Bldg., Pittsburgh, Pa.
Smith, George H., Steel Casting Co., Milwaukee, Wis.
Union Steel Casting Co., 62nd and Butler Sts., Pittsburgh, Pa.
United Engineering & Foundry Co., Farmers Bank Bldg., Pittsburgh, Pa.

APPRAISALS
McKee, Arthur G., & Co., 2422 Euclid Ave., Cleveland, O.

AXLES
Bethlehem Steel Co., Bethlehem, Pa.
Carnegie Steel Co., 431 Carnegie Bldg., Pittsburgh, Pa.
Champion Machine & Forging Co., The, 3675 E. 78th St., Cleveland, O.
Illinois Steel Co., 208 So. LaSalle St., Chicago, Ill.
National Tube Co., Frick Bldg., Pittsburgh, Pa.

BABBITT METAL
Cadman, A. W., Mfg. Co., 2816 Smallman St., Pittsburgh, Pa.

BALING PRESSES
Logemann Brothers Co., 3126 Burleigh St., Milwaukee, Wis.

BANDS AND HOOPS (Galvanized Strips)
Sharon Steel Hoop Co., Sharon, Pa.

BANDS (Iron)
Bethlehem Steel Co., Bethlehem, Pa.

BANDS (Welded Iron and Steel)
Akron-Selle Co., Akron, O.

BAR BENDERS
Kardong Bros., 346 Buchanan St., Minneapolis, Minn.

BARGES (Steel)
American Bridge Co., 71 Broadway, New York City.

BARRELS (Steel)
Cleveland Wire Spring Co., The, 1281 E. 38th St., Cleveland, O.

BARROWS
Sterling Wheelbarrow Co., Milwaukee, Wis.

BARS (Alloy)
Bourne-Fuller Co., The, 1912 Scranton Rd., Cleveland, O.
Central Alloy Steel Corp., Massillon, O.
Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.
Wheelock, Lovejoy & Co., Inc., 128 Sidney St., Cambridge, Mass.

BARS (Concrete Reinforcing)
Bethlehem Steel Co., Bethlehem, Pa.
Bourne-Fuller Co., The, 1912 Scranton Rd., Cleveland, O.
Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.
Franklin Steel Works, Franklin, Pa.
Gulf States Steel Co., Brown-Marx Bldg., Birmingham, Ala.
Laclede Steel Co., Arcade Bldg., St. Louis, Mo.
Migret, Rene, 7 Boulevard Defontaine, Charleroi, Belgium
Ryerson, Jos. T., & Son, Inc., 16th and Rockwell Sts., Chicago, Ill.

BARS (Iron and Steel)
Andrews Steel Co., Newport, Ky.
Bethlehem Steel Co., Bethlehem, Pa.
Bourne-Fuller Co., The, 1912 Scranton Rd., Cleveland, O.
Lockhart Iron & Steel Co., Pittsburgh, Pa.
Morris, Wheeler & Co., 30th and Locust Sts., Philadelphia, Pa.
Penn Iron & Steel Co., Creighton, Pa.

BARS (Steel)
Bethlehem Steel Co., Bethlehem, Pa.
Bliss & Laughlin, Inc., Harvey, Ill.
Bourne-Fuller Co., The, 1912 Scranton Rd., Cleveland, O.
Carnegie Steel Co., 431 Carnegie Bldg., Pittsburgh, Pa.
Central Alloy Steel Corp., Massillon, O.
Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.
Franklin Steel Works, Franklin, Pa.
Illinois Steel Co., 208 S. LaSalle St., Chicago, Ill.
Illinois Steel Warehouse Co., 1319 Wabansia Ave., Chicago, Ill.
Inland Steel Co., First National Bank Bldg., Chicago, Ill.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Keystone Drawn Steel Co., Spring City, Pa.
Migret, Rene, 7 Boulevard Defontaine, Charleroi, Belgium
Pacific Coast Steel Co., Rialto Bldg., San Francisco, Calif.
Republic Iron & Steel Co., Youngstown, O.
Ryerson, Jos. T., & Son, Inc., 16th and Rockwell Sts., Chicago, Ill.
Tennessee Coal, Iron & Railroad Co., 1351 Brown-Marx Bldg., Birmingham, Ala.
Youngstown Sheet & Tube Co., Youngstown, O.

BARS, STEEL (Electric Furnace)
Timken Roller Bearing Co., The, Canton, O.

BEAMS, CHANNELS, ANGLES, ETC.
Bethlehem Steel Co., Bethlehem, Pa.
Blystone Mfg. Co., Ironton St., Cambridge Springs, Pa.
Carnegie Steel Co., 431 Carnegie Bldg., Pittsburgh, Pa.
Illinois Steel Co., 208 So. LaSalle St., Chicago, Ill.
Inland Steel Co., First National Bank Bldg., Chicago, Ill.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Migret, Rene, 7 Boulevard Defontaine, Charleroi, Belgium
Phoenix Iron Co., The, 20 So. 15th Philadelphia, Pa.
Ryerson, Jos. T., & Son, Inc., 16th and Rockwell Sts., Chicago, Ill.

BEARINGS (Ball)
Hoover Steel Ball Co., Ann Arbor, Mich.
New Departure Mfg. Co., The, Bristol, Conn.
Norma-Hoffmann Bearings Corp., Stamford, Conn.

BEARINGS (Journal)
Cadman, A. W., Mfg. Co., 2816 Smallman St., Pittsburgh, Pa.
Hyatt Roller Bearing Co., Newark, N. J.
Timken Roller Bearing Co., The, Canton, O.

BEARINGS (Motor)
Hoover Steel Ball Co., Ann Arbor, Mich.
Hyatt Roller Bearing Co., Newark, N. J.
Norma-Hoffmann Bearings Corp., Stamford, Conn.

BEARINGS, (Oilless)
Rhoades, R. W., Metaline Co., Inc., Rhoades Bldg., Long Island City, N. Y.

BEARINGS (Roller)
Hoover Steel Ball Co., Ann Arbor, Mich.
Hyatt Roller Bearing Co., Newark, N. J.
Norma-Hoffmann Bearings Corp., Stamford, Conn.

BEARINGS (Tapered Roller
Timken Roller Bearing Co., The, Canton, O.

BEARINGS (Thrust)
Hoover Steel Ball Co., Ann Arbor, Mich.
Norma-Hoffmann Bearings Corp., Stamford, Conn.
Timken Roller Bearing Co., The, Canton, O.

BELT FASTENERS
Bourne-Fuller Co., The, 1912 Scranton Rd., Cleveland, O.

BENCHES AND FRAMES (Drawing)
Morgan Construction Co., Worcester, Mass.

BENCHES AND FRAMES (Wire Drawing)
Vaughn Machinery Co., Cuyahoga Falls, O.

See Index to Advertisements for Pages Containing Advertisements of Companies Listed Above